STATE OF CALIFORNIA

ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

Application for Certification of Duke Energy for the Morro Bay Power Plant Project	))))	Docket No. 00-AFC-12

COMMITTEE-PROPOSED AMENDMENTS TO THE THIRD REVISED PRESIDING MEMBER'S PROPOSED DECISION

On June 11, 2004, the Morro Bay AFC Committee ("Committee") (Chairman William J. Keese, Presiding Member, and Commissioner James D. Boyd, Associate Member) published the *Third Revised Presiding Member's Proposed Decision* ("3RPMPD"). After further deliberations, the Committee has made additional changes to the proposed decision which apply to the chapters of the 3RPMPD entitled "Introduction" (pages 1-15), "Terrestrial Biological Issues" (pages 222-266), "Aquatic Biological Issues" (pages 267-326), "Alternative Cooling Options" (pages 327-354), "Land Use" (pages 460-479), and "Override" (pages 589-600). These changes are shown in the attached new chapters by the same titles. In each of the attached, the underline and strikeout shown in the 3RPMPD has been "accepted" and new underline and strikeout shows the additions and deletions that the Committee has proposed to the Commission. Thus the attached substitute chapters show changes to the 3RPMPD in underline for additions ~~strikeout for deletions~~. Each attached chapter has been paginated from page 1 for discussion purposes to avoid confusion should the changes cause the chapters to become longer or shorter than they were in the 3RPMPD. A final decision will be produced after the Commission has adopted the 3RPMPD with the proposed changes and any others that may be discussed in the adoption hearing.

The full Commission will consider adopting the 3RPMPD with the attached changes and certifying the Morro Bay Power Plant Project at a special Business Meeting on August 2, 2004 at 2 PM.

July 9, 2004

_____	_____
WILLIAM J. KEESE	JAMES D. BOYD
Chairman and Presiding Member	Commissioner and Associate Member
Morro Bay AFC Committee	Morro Bay AFC Committee

INTRODUCTION

The following section contains a summary of this Decision, an overview of the process used at the Commission to certify power plant sites and facilities, and a history of the procedural steps of this particular case. It also contains a discussion of the relationship between the California Coastal Act and the Commission's power facility certification process.

A. SUMMARY

This Decision contains our rationale for determining that the proposed Morro Bay Power Plant Project (Project) complies with all applicable laws, ordinances, regulations, and standards, and may therefore be licensed. It is based exclusively upon the record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record supporting our findings and conclusions, and specified the measures required to ensure that the Project is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

The Project is a major modernization of the existing Morro Bay Power Plant (MBPP). Duke Energy Morro Bay LLC (Duke or Applicant) proposes to remove the existing facility and replace it with a new combined-cycle power plant just north of the existing MBPP. The existing MBPP consists of four natural gas-fired generating units, employing 1950s and 1960s technology. Generating capacity of the existing plant is 1002 MW. The proposed Project will have two modern combined-cycle units. Each new unit will consist of two natural gas-fired turbines, a heat recovery steam generator and one steam turbine. The heat recovery system will also include supplementary firing, or "duct-firing," to boost performance. (Ex. 117, p. 26.) Generating capacity of the Project, including duct firing, will be 1200 MW.

Natural gas will continue to be delivered from an existing PG&E pipeline. The Project will continue to interconnect with the electrical grid at the existing PG&E switchyard, which is located on the eastern portion of the plant site. (Ex. 117, p. 26.) Based on current design, Applicant expects the proposed Project to exceed $800 million in capital costs. (Ex. 117, p. 24.)

Duke anticipates that the Project will proceed in three stages: Phase I - demolition of the tank farm, which will take three months; Phase II - construction of the new power block, which will take 21 months; and Phase III - demolition of the existing MBPP, which will begin after the new units commence commercial operation and take no longer than 36 months. (Ex. 117, pp. 26-27.)

In proposing the modernization Project, Applicant has identified the following objectives:

- Develop a more efficient combined-cycle facility, with duct-firing, that can compete more effectively in the California and regional electricity market than the existing facility;
- Make use of existing infrastructure wherever possible and practical;
- Develop a project that is consistent with local plans;
- Avoid or minimize environmental impacts;
- Improve the environment including the visual setting; and
- Optimize the design to meet these requirements and feasibility from a business perspective. (Ex. 117, p. 36.)

The proposed Project will have a number of environmental benefits relative to the existing plant. For example, the two new combined-cycle units will have four 145-foot-tall stacks, which are significantly lower than the three 450-foot-tall existing stacks. This feature, along with relocation of the power plant to the site of the existing tank farm north of the old plant, will reduce visual impacts for a great number of viewers. The Project will also increase generation capacity from

the existing 1,002 MW to 1,200 MW, a 20 percent increase. This will be achieved while decreasing by approximately 30 percent the amount of natural gas required to produce each MW of electricity. To control air emissions, MBPP's new combined cycle units will employ best available control technology (BACT), including selective catalytic reduction (i.e., reduction catalyst, aqueous ammonia injection) for controlling nitrogen oxides and an oxidation catalyst for controlling carbon monoxide. Together, these factors will result in reduced air emissions from the modernized power plant. All emissions will be fully offset in accordance with applicable law.

One of the most controversial areas of this case is the potential impact to the marine environment in the Morro Bay Estuary from the once-through cooling water system. For the last 50 years the MBPP, and in particular the once-through cooling system, have formed part of the existing environmental setting in Morro Bay. After a careful analysis of the evidence, we have determined that the proposed Project will have less impact on the aquatic environment than the existing power plant. Based on the requirements of the California Environmental Quality Act, (CEQA) the proposed Project will have no significant adverse impact on the aquatic environment.

Nevertheless, by our conservative analysis, we have determined that the proposed Project will cause a maximum 16.2 percent proportional mortality of susceptible aquatic species as a result of these organisms being entrained in the Project's once-through cooling water system. Though less than the impacts of the existing plant, such an adverse effect must still be addressed under the provisions of the federal Clean Water Act. Section 316(b) of the Act requires the use of "best technology available" (BTA) to avoid impacts. During the proceeding, Energy Commission staff proposed dry cooling as BTA. The parties presented extensive evidence on this topic. Based on the evidentiary record, we have determined that dry cooling is not feasible at the proposed Project site. In addition, we concur with the staff of the Central Coast Regional Water Quality

Control Board that the cost of dry cooling at this particular site is far too high and cannot be justified when compared to the preferred option – a habitat enhancement program (HEP).

Unlike the dry cooling option, a HEP will more broadly address some of the most serious environmental problems in the Morro Bay Estuary. We have reviewed an extensive body of evidence on this subject and found that both the Applicant and the staff of the Regional Board have presented HEP approaches which can comply with applicable law. In fact, based on the evidence in our record, we firmly believe that even if dry cooling were feasible and cost free, it would not offer the environmental benefits to the Morro Bay Estuary that a successful HEP will provide. The record is clear that even without operation of the existing or the proposed new power plant, the Morro Bay Estuary is on a path of rapid decline, largely due to sedimentation. The HEP proposals associated with Duke's Project offer the most promising opportunities available to slow sedimentation and help preserve the estuarine environment of Morro Bay.

We have also determined that the Project may impact sensitive terrestrial species. The Decision contains requirements for funding of compensatory habitat and other mitigation measures to reduce such impacts to insignificant levels. The use of Native American monitors from affected local tribes will reduce the risk to cultural resources during construction activities.

Finally, the Project will provide significant financial benefits to the Morro Bay community. These benefits will include the local purchase of about $10.3 million worth of material for Project construction, a total construction payroll estimated at approximately $67 million, and on-going local expenditures for maintenance and materials projected at $260,000 annually. Once completed, the Project will have an annual operational payroll of approximately $8.6 million. Property tax revenues for the City of Morro Bay will be substantially above the level provided by the existing plant, although the passage of AB 81 makes the increase difficult

to accurately estimate. Moreover, Duke has agreed to support a minimum annual funding to the City of Morro Bay from property taxes, franchise fees, and other city fees. The company will provide the City with additional funding to guarantee the annual payment should the combined totals not reach this level.

B. THE CALIFORNIA COASTAL ACT AND THE ENERGY COMMISSION'S POWER ~~PLANT~~ FACILITY SITING PROCESS.

Public Resources Code Section 25523(b) states that the Energy Commission's decisions in certification proceedings for power facilities in the coastal zone shall contain:

> specific provisions to meet the objectives of [the California Coastal Act] as may be specified in the report submitted by the California Coastal Commission pursuant to subdivision (d) of Section 30413 [of the Public Resources Code], unless the [energy] commission specifically finds that the adoption of the provisions specified in the report would result in greater adverse effect on the environment or that the provisions proposed in the report would not be feasible.

However, Section 30413(d) expressly refers to the Coastal Commission's report as being submitted to the Energy Commission in notice of intention ("NOI") proceedings. Thus the question arises whether Sections 25523(b) and 30413(d) apply in AFC proceedings, such as the Morro Bay proceeding, that have not been preceded by an NOI.

This question inspired a substantial amount of briefing and commentary from the parties and led to several preliminary approaches to the problem in various revisions of the Morro Bay Committee's proposed decisions. Ultimately, the Commission must attempt to harmonize all of the relevant statutory provisions in order to implement the intent of the Legislature. (*County of Santa Clara v. Perry* (1998) 18 Cal. 4th 435, 442.) Having now carefully considered all of the arguments, and in particular having examined the applicable legislative history,

we conclude that the Legislature intended to give the recommendations of the Coastal Commission a special role in Energy Commission proceedings.

The fundamental provisions of the Warren-Alquist Act were enacted in 1974. The new process for licensing power projects set forth in the Act required that all proposed facilities would be subject to a two-stage licensing process. The first stage was the NOI, which assessed the merits of several alternative sites; the second stage was the more detailed analysis of a specific site in the AFC process.

In 1976 the Legislature enacted the California Coastal Act. The Coastal Commission was to have broad authority over almost all forms of coastal zone development. Documents in the State Archives concerning the legislative debate indicate that earlier proposed versions of the Coastal Act legislation would have required the Coastal Commission itself to issue permits for coastal power plants. (Report to the Assembly Republican Caucus on AB 1277 from Marc Christensen, August 6, 1976 [including "State Coastal Report" prepared by California Research, pp. 4 - 5].) However, in the legislative process such provisions were deleted from proposed Public Resources Section 30500 as it pertained to projects subject to Energy Commission jurisdiction. (*Ibid.*) In its place was the following compromise:

> Concerning joint jurisdiction with the Energy Commission, the Coastal Commission's role has been reduced to determining a list of sites for their consistency with coastal zone policies for the siting of electrical energy facilities. Moreover, *the Coastal Commission must make findings about the impact on coastal resources of such facilities, and the Energy Commission must adopt them, unless "to do so would result in a greater adverse impact on inland resources . . . or the mitigation measures proposed would not be feasible."*

(*Ibid.* [emphasis added].)

The provisions of current Section 25523(b) were obviously born of this compromise. Additional legislative history emphasizes the legislative intent that the Coastal Commission would have an elevated role in the Energy Commission's siting process, with "specific provisions" from its report binding on the Energy Commission absent the latter's findings that such provisions would be infeasible or would result in greater environmental impact. (See, e.g., Assem. Com. on Resources, Land Use, and Energy, analysis of SB 1277 as amended August 5, 1976, p. 4 ["Energy Commission must adopt Coastal Commission recommendations unless to do so would result in greater adverse effect on the environment or the mitigation measures proposed would not be feasible"]; Sen. Comm. on Nat. Res. and Wildlife, Analysis of SB 1277 as amended August 12, 1976 [similar language].)

The legislative documents cited above make no mention at all of the NOI. Such a distinction was unnecessary in 1976, as all power plant proposals required an NOI. In 1978 the Legislature first enacted exceptions from the NOI for certain kinds of power plants. (SB 1805 (Holmdahl), Stats. 1978, ch. 1010, § 4 [enacting Pub. Resources Code, § 25540.6].) The legislative history in the State Archives for SB 1805 reveals no intent to diminish the role of the Coastal Commission in the Energy Commission process when Public Resources Code Section 25540.6 was first enacted. Similarly, amendments to that statute in 1988 and 1993 also indicate no intent to diminish the role of the Coastal Commission. Thus, there is no indication that the Legislature's reference to the NOI, when Section 30413 was enacted in 1976, was intended to so limit the Coastal Commission's role, and there is no indication of legislative intent to diminish that role when exceptions to the NOI process were enacted (and amended) in Section 25540.6.

Our review of the sequencing of the applicable statutes, and their legislative history, requires us to reconsider the Committee's earlier, preliminary conclusions. It is true that the literal words of the statutes can be read as limiting a binding Coastal Commission report to AFC proceedings that were preceded by

an NOI. However, we believe that the words are ambiguous, and that the weight of the legislative history, and an understanding of the purpose of the coastal protection statutes, indicates to the contrary. As the California Supreme Court has explained:

> Ordinarily, the words of the statute provide the most reliable indication of legislative intent. However, if the terms of the statute provide no definitive answer, then courts may resort to extrinsic sources, including the objects to be achieved. When the statutory language is ambiguous, the court may examine the context in which the language appears, adopting the construction that best harmonizes the statute internally and with related statutes. Both the legislative history of the statute and the wider historical circumstances of its enactment may be considered in ascertaining the legislative intent.

(*County of Santa Clara v. Perry*, *supra*, 18 Cal.4th at p. 442 [internal quotation marks and citations omitted].) Taking into account all of the factors discussed by the Supreme Court, it appears clear to us that the Legislature in fact intended that the Coastal Commission have a more elevated and influential role in the power facility siting process than that of other interested agencies. This more elevated role requires more than a mere override of inconsistent Coastal Act provisions; it requires the Energy Commission to make specific findings pursuant to Section 25523(b) if it does not accept the specific provisions of the 30413(d) report.

In the Morro Bay AFC proceeding, the Coastal Commission's report to the Energy Commission was submitted on December 12, 2002, more than a month after the close of all evidentiary hearings in the case. Duke has objected that by filing its report so late in the process the Coastal Commission has denied Duke, other interested parties, and the public the opportunity for hearing and public comment that they assert is required by law.[1]

[1] Letter to William J. Keese from Christopher T. Ellison, 1/7/03; Opening Brief of Duke Energy Morro Bay LLC, 2/18/04, pp. 9-11.

The Coastal Act authorizes the Coastal Commission to participate in the Energy Commission's AFC process by presenting evidence as well as examining and cross-examining witnesses.[2] That statutory language, as well as considerations of fairness to all participants in a proceeding, and the desirability of having the Energy Commission consider Coastal Commission input simultaneously with input from all other participants, are all factors indicating that it would be best for the Coastal Commission to provide its expertise to the Energy Commission no later than the beginning of the evidentiary hearing process. Ideally this input would occur in time for the Energy Commission staff to take account of Coastal Commission views in the FSA.

At the Committee hearing on March 3, 2004, the Coastal Commission, the members of the Committee, the Energy Commission staff, and other applicants' representatives concurred that agreement on the timing of Coastal Commission input was needed.[3] We have therefore directed the Energy Commission staff to meet with the staff of the Coastal Commission in order to reach a mutual understanding on the timing of the 30413(d) report, as well as other logistical matters relating to Coastal Commission participation in future stand-alone AFC proceedings for coastal zone projects.

With regard to the specific Coastal Commission report submitted in the Morro Bay proceeding, Duke is certainly correct that the timing of the submittal left something to be desired, and it is likely that we will ultimately conclude that such a submittal would not be timely in future proceedings. However, in the Morro Bay proceeding, enough time has passed since submittal of the Coastal Commission report so that all parties, including the applicant, have had notice of, and an

[2] Public Resources Code section 30413(e).

[3] 3/3/04 RT 13, 30, 48, 53, 55, 56, 73, and 91.

opportunity to respond to, the Coastal Commission recommendations, that is sufficient to allow us to accord the report 25523(b) status.

Therefore, for all of the reasons discussed above, and pursuant to Section 25523(b), this Decision incorporates all of the "specific provisions" recommended by the Coastal Commission in its Section 30413(d) report, absent specific findings of infeasibility or greater adverse environmental impact. When assessing whether a Coastal Commission "provision" is "feasible," we will use the definition of the term found in the Guidelines to the California Environmental Quality Act ("CEQA"): " 'Feasible' means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." (Cal. Code Regs., tit. 14, § 15364.) While we do not necessarily believe that the CEQA definition is the only proper one to use, it is certainly reasonable, given the similar goals of the environmental-protection provisions of the Warren-Alquist Act, the Coastal Act, and CEQA.

~~In the Second Revised Presiding Member's Proposed Decision we addressed the Coastal Commission's role in the Energy Commission's AFC process. We reasoned that: (1) Public Resources Code Section 30413(d) provides that the Coastal Commission's "report" is to be prepared for Notices of Intention (NOI) proceedings at the Commission; (2) Public Resources Code Section 25523(b) requires the Commission to include in its decisions the "specific provisions" recommended in that report unless the Energy Commission finds such provisions infeasible or likely to result in greater environmental harm; (3) the Morro Bay AFC did not require an NOI, and thus required no 30413 report in the course of an NOI ; (4) the Coastal Commission's report filed in the course of the Morro Bay AFC is therefore not the "report" referred to in the Warren-Alquist Act; and (5) therefore, the Energy Commission is not bound to include in its decision the "specific provisions" in the Coastal Commission report. We proposed instead a presumption in favor of Coastal Commission recommendations with regard to~~

coastal protection issues, so long as such recommendations were supported by the evidentiary record. We further proposed that our conclusion be made a "precedent decision" pursuant to the Administrative Procedure Act, and thus binding on future decisions.

The proposed precedent in the Second Revised Decision evoked a flurry of additional briefing on the legal issues regarding the role of the Coastal Commission's recommendations in the power plant siting process. The briefing included policy arguments, canons of statutory construction, legislative history, and logical conundrums that arguably result from such statutory interpretation. Unfortunately, the issue was addressed in a manner that may have given insufficient response time to other interested parties and agencies not involved in this case – most notably the San Francisco Bay Conservation and Development Commission ("BCDC"). BCDC is subject to identical statutory provisions and has frequently participated in the Energy Commission siting process for projects within its jurisdictional boundaries, providing its own statutory equivalent of the 30413 report.

Commission staff and the Coastal Commission contend that the Warren-Alquist Act unambiguously requires that the provisions of the 30413 report be included in the Energy Commission AFC decision, inasmuch as Section 25523(b) requires that the final AFC decision include "specific provisions to meet the objectives of [the Coastal Act] as may be specified in the report submitted by the Coastal Commission pursuant to subdivision (d) of Section 30413 . . . ." Energy Commission staff and the Coastal Commission further contend that even if ambiguity in the statute's intent is created by Section 30413's reference to the NOI, the applicable statutes must be harmonized and interpreted to be consistent with discernable legislative intent.:

> On its face, section 25523(b) applies to all AFC proceedings, and does not make a distinction between "stand-alone" AFCs and those preceded by an NOI proceeding. Further, the reference in section 25523(b) to section 30413(d) does nothing to change this, since section 30413(d) applies

~~"whenever" the Energy Commission carries out its siting authority for proposals in the coastal zone…~~

~~(Coastal Commission Comments on the 2nd PMPD, 4/28/04, Page 4). This position was further emphasized by Coastal Commission representative John Bowers at the April 29, 2004 El Segundo Committee Conference on the Revised PMPD. Mr. Bowers urged the Committee to "back away" from the precedent being considered in both cases and suggested that the Coastal Commission and the Energy Commission discuss in a generic context the roles and responsibilities of the two agencies.~~

~~The Commission recognizes the Coastal Commission's important role in the siting of power plants in the Coastal Zone and intends to assure that the Coastal Commission's views are appropriately considered in this and future coastal siting cases. Having said this, the Commission believes that the legal and procedural question governing the roles and responsibilities of the Coastal Commission in power plant licensing proceedings would be best resolved through a separate investigation under the direction of the Commission's Siting Committee. The Commission has therefore removed any conclusions on this issue from this Decision.~~

~~Nevertheless, most of the Coastal Commission's recommendations are included as conditions of certification in this Decision. That is because the record shows that the included conditions are necessary to avoid or mitigate significant adverse environmental impacts, under the requirements of the California Environmental Quality Act ("CEQA").~~

~~For each Coastal Commission recommendation that we have not included, we have found that the recommendation would either be infeasible or would cause greater environmental harm, findings that justify rejection of mitigation measures~~

~~under CEQA. As a result, although we make no conclusion as to whether a Coastal Commission report submitted under section 30413(d) is binding in AFC proceedings that were not preceded by an NOI,~~

~~the practical result is the same as if we had concluded that the report is binding in this proceeding.~~

In addition, we have determined that the Project as described herein will comply with all applicable laws, ordinances, regulations, and standards (LORS). ~~The Coastal Commission continues to believe that the Project does not comply with portions of the Coastal Act nor with portions of the City of Morro Bay's Local Coastal Program. Projects that do not comply with applicable state or local LORS cannot be certified unless the Energy Commission makes "override" findings under Public Resources Code section 25525. Therefore, assuming hypothetically that the Coastal Commission is correct (while formally concluding otherwise), we have made override findings concerning those two laws.~~ We have also made override findings pursuant to Public Resources Code section 25525. These findings override those portions of the Coastal Act and the City of Morro Bay's Local Coastal Program which, as interpreted by the California Coastal Commission, could prevent construction and operation of the Project. This matter is discussed in a new section of this Decision entitled **OVERRIDE**.

C. SITE CERTIFICATION PROCESS

The Morro Bay Power Plant Project and its related facilities fall within Commission licensing jurisdiction. (Pub. Resources Code, §§ 25500 et seq.) During its licensing proceedings, the Commission acts as the lead state agency under the California Environmental Quality Act. (Pub. Resources Code, §§ 25519 (c), 21000 et seq.) The Commission's certification process provides a thorough, timely review and analysis of all aspects of a proposed project. During this process, we conduct a comprehensive examination of a project's potential

economic, public health and safety, reliability, engineering, and environmental ramifications.

The Commission's process and associated documents are functionally equivalent to the traditional Environmental Impact Report process. (Pub. Resources Code, § 21080.5.) It is designed to allow review of a project to be completed within a limited period of time; a license issued by the Commission is in lieu of other state and local permits.

Significantly, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally, or on a more formal level as Intervenors with the same legal rights and duties as the project developers. Public participation is encouraged at every stage, and our process requires substantially more opportunities for public participation and review than does the traditional CEQA process. Moreover, as explained in subsequent portions of this document, we have fully and fairly examined the positions formally espoused by various Intervenors and members of the public. On balance, we believe that the participation of the public and local Intervenors has resulted in a painstaking scrutiny of the Applicant's proposal, as well as the development of Conditions of Certification which extensively reduce and safeguard against potential Project impacts.

The certification process begins when an Applicant submits the Application for Certification (AFC). Commission staff reviews this submission, and recommends to the Commission whether or not the accompanying information is adequate to permit formal review to commence. Once the Commission determines that an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process.

The initial portion of the certification process is weighted heavily toward ensuring public awareness of the proposed project and obtaining such further technical

information as is necessary. The Office of the Public Adviser is available to inform members of the public concerning the certification proceedings, and to assist those interested in participating. During this phase, the Commission staff sponsors numerous public workshops at which Intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of a proposed project in the Preliminary Staff Assessment (PSA), which is made available for public comment. Staff's responses to public comment on the PSA and its complete analysis are published in the Final Staff Assessment (FSA).

The Committee also conducts various public events, including at least one Prehearing Conference, to assess the adequacy of available information, identify issues, and determine the positions of the various participants. Information gleaned from these events forms the basis for a Hearing Order organizing and scheduling formal Evidentiary Hearings. At these hearings, all formal parties are able to present testimony, under oath or affirmation, which is subject to cross-examination by other parties and to questioning by the Committee. The public may also comment on a proposed project at these hearings. Evidence adduced during these hearings provides the basis for the decision-makers' analysis.

This analysis, in turn, appears in a Committee recommendation to the full Commission in the form of a Presiding Member's Proposed Decision (PMPD), which is available for a public review period of at least 30 days. This document provides the Committee's recommendation to the full Commission concerning a project's ultimate acceptability. The PMPD also determines a project's conformity with applicable laws, ordinances, regulations, and standards. Depending upon the extent of revisions necessary in reaction to comments received on the PMPD, the Committee may elect to publish one or more revised versions and has done so in the Morro Bay case. This latter document triggers an additional

15 day public comment period. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

Throughout the licensing process, the members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Staff, and formal Intervenors function independently and with legal status equal to one another. No party has an “inside track” in the process. Rather, the decision-makers rely solely on the legal sufficiency and persuasiveness of the evidence. An "ex-parte" rule prohibits parties from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications occur on the public record.

D. PROCEDURAL HISTORY

The Public Resources Code (§§ 25500 et seq.) and Commission regulations (20 Cal. Code of Regs., §§ 1701, et seq.) mandate a public process and specify the occurrence of certain necessary events. The key procedural elements occurring during the present case are summarized below.

In August, 1999, Duke proposed a single 500 MW power plant project at the existing MBPP site to take the place of Units 1 and 2, with Unit 3 and 4 continuing to operate. However, the City of Morro Bay sought the complete and early demolition of the existing power plant units as a condition of its support for the modernization Project. In response to these local concerns, Applicant withdrew its AFC and redesigned the proposal to reduce visual impacts, accelerate removal of the existing plant, and address various other local concerns.

On October 23, 2000, Duke filed a new AFC seeking approval from the Commission to construct and operate the proposed net 1200 megawatt (MW)

natural-gas fired, combined cycle, combustion turbine Morro Bay Power Plant Project. On December 27, 2000, the Commission found the AFC to be data adequate, which began Staff's analysis of the Project.

The Committee scheduled its initial public event, an "Informational Hearing and Site Visit," by notice dated, January 31, 2001. This Notice was sent to all people known or expected to be interested in the proposed Project, including the owners of land adjacent to, or in the near vicinity of, the Morro Bay Power Plant; it was also published in a local general circulation newspaper.

The Committee conducted the Informational Hearing in Morro Bay on February 20, 2001. At this event, the Committee and other participants discussed the proposed Morro Bay Power Plant, described the Energy Commission's review process, and explained opportunities for public participation. The parties also toured the site of the Morro Bay Power Plant.

Over the course of the next several months, Commission staff held public events to assess the status of the Project, including submission of necessary information by Applicant. Staff held the first of its thirteen (13) public workshops on February 21, and 22, 2001, a Data Request Workshop; April 5, 2001, a Data Response Workshop on Visual Resources; June 5, 6, 7, 12, 13, 14, and 21, 2001, Preliminary Staff Assessment (PSA) Workshops on technical areas such as Air Quality, Cultural Resources, Visual Resources, Traffic, Transmission Line Safety and Nuisance, Noise, Socioeconomics, Land Use, Soils and Water Resources, and Biological Resources. On March 20, and 21, 2002, Staff held a Biological Resources Workshop including Cooling Options, and on September 10, 2002, held a workshop on the Habitat Enhancement Program.

Staff prepared both a Preliminary and Final Staff Assessment, and conducted workshops in Morro Bay to discuss findings, proposed mitigation, and proposed compliance monitoring requirements. A total of nine workshops on the PSA were

held in Morro Bay during June 2001. During approximately 45 hours of workshops the Applicant, Intervenors, agencies, the public, and Staff discussed the PSA and outstanding issues.

In addition to these and several other workshops, extensive coordination occurred with local, state, and federal agencies that have an interest in the Morro Bay Power Project such as the City of Morro Bay, the County of San Luis Obispo, the San Luis Obispo Air Pollution Control District, the California Coastal Commission, the Monterey Bay National Marine Sanctuary, the Regional Water Quality Control Board, the Native American Heritage Commission, Morro Bay Estuary Project, California State Parks, Department of Fish and Game, and the National Marine Fisheries Service, as well as numerous Intervenors and the interested residents of the community.

The Committee issued a Scheduling Order on April 2, 2001, and held an initial Status Conference on April 24, 2001. The Committee then issued a Revision to the Committee Scheduling Order on May 11, 2001, and held a second Committee Status Conference on August 16, 2001. A Status Conference provides a public forum allowing the Applicant, Commission staff, interested parties, governmental agencies, and members of the public to indicate whether case development is progressing satisfactorily, and to bring potential schedule delays or other relevant matters to the Committee's attention.

The Committee then held a Prehearing Conference on November 29, 2001. The basic purposes of the Prehearing Conference are to assess the parties' readiness for Evidentiary Hearings, to clarify areas of agreement or dispute, to identify witnesses and exhibits, to determine upon which topics parties desire to cross-examine witnesses from other parties, and to discuss procedures which will assist the Committee in concluding this licensing process in as timely a manner as feasible.

The Committee scheduled and conducted its first Evidentiary Hearing in Morro Bay on December 17, 2001. A second set of Evidentiary Hearings occurred during January 29, 30, 31, 2002, and February 5, and 6, 2002. The Committee then conducted a third set of Evidentiary Hearings on March 12, 13, and 14, 2002. A Fourth set of Evidentiary Hearings took place on June 4 through 6, 2002 for Group IV topics, and final Evidentiary Hearings were held on November 5 and 6, 2002, to receive evidence on the Habitat Enhancement Plan (HEP).

At these publicly-noticed hearings all parties were afforded the opportunity to present evidence, cross-examine witnesses, and to rebut the testimony of other parties, thereby creating an evidentiary record which forms the basis for the Commission Decision. The hearings before the Committee also allowed all parties to argue their positions on disputed matters and provided a forum for the Committee to receive comments from the public and other governmental agencies. During this review process, the Committee issued nearly 25 Orders or Rulings, approximately 15 Notices, and held 17 hearings or conferences.

Formal Intervenors in this process include: California Unions for Reliable Energy (CURE); The Coastal Alliance on Plant Expansion (CAPE); Mr. Babak Naficy; Earth Justice Environmental Law Clinic at Stanford; Patti Dunton; and the City of Morro Bay. Interested Agencies involved were the San Luis Obispo County Air Pollution Control District; the California Coastal Commission; the Monterey Bay National Marine Sanctuary; the Native American Heritage Commission; Morro Bay Estuary Project; the California State Parks; National Marine Fisheries Service; and, the California Department of Fish and Game.

After reviewing the evidentiary record, the Committee published its Presiding Member's Proposed Decision on April 30, 2003. The comment period on the PMPD ended on June 13, 2003.

The Committee conducted a public conference on June 30, 2003, in Morro Bay, to receive oral comments on the PMPD. The Committee issued a Revised PMPD on November 21, 2003. On March 3, 2004, the Committee held a hearing to take oral argument concerning the appropriate role under the law for recommendations by the Coastal Commission in a stand-along AFC proceeding. The 2nd Revised PMPD was issued for comment on April 15, 2004. After considering all comments on that document, the Committee issued a 3rd Revised PMPD on June 15, 2004, and proposed changes to that PMPD on July 9, 2004.

V. ENVIRONMENTAL ASSESSMENT

As part of its statutory mandate, the Commission must analyze a project's potential effect upon various elements of the human and natural environments. For our analysis of this Project's effects upon biological resources, we have divided our discussion into separate sections, one addressing terrestrial biology and another addressing aquatic biology. A separate section contains the evaluations of various alternatives for cooling. The evaluation of Applicant's Habitat Enhancement Plan is also found under a separate heading.

A. TERRESTRIAL BIOLOGICAL RESOURCES

SUMMARY OF THE EVIDENCE

We have analyzed the evidence of record to determine the potential impacts to terrestrial biological resources from the Morro Bay Power Plant Modernization Project. The evidence includes Applicant's various filings such as the AFC (Ex. 4, pp. 6.6B 1-148.) and other documents in support of Duke's position on terrestrial biological impacts. (Ex. 199, pp. 10-13; 6/4/02 RT 171-179.) Staff provided its assessment of terrestrial biological resources and impacts of the Project to state-listed and federally listed species, fully protected species, species of special concern, wetlands, and other areas of critical biological concern. (Ex. 197, pp. 3-1 through 3-61; Ex. 198, pp. 3-8.) Staff also described the terrestrial biological resources of the Project site and ancillary facilities. In doing so Staff identified impacts, determined the adequacy of mitigation proposed by the Applicant, and proposed additional mitigation measures to reduce identified impacts to less than significant levels, and to ensure compliance with applicable laws, ordinances, regulations, and standards. (Ex. 197, 3-1.)

Analysis of impacts is based upon information provided by: the Applicant in the data adequacy information; responses to data requests; public workshops; and

through discussions with various agency representatives including: the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (CDFG), the California Department of Parks and Recreation (DPR), the National Marine Fisheries Service (NMFS), the California Coastal Commission (CCC), and the Morro Bay National Estuary Program (MBNEP). (*Id*.)

1. Setting

In the Morro Bay region, Applicant and Staff identified seven sensitive ecological communities listed by the California Natural Diversity Data Base (CNDDB) including: central coast dune scrub, central maritime chaparral, valley needlegrass grassland, northern coastal salt marsh, coastal brackish marsh, coastal and valley freshwater marsh, and riparian woodlands (*Id*; Ex. 4, p. 6.6B-46 to 47.) Within one mile of the Project site, there are the following community types: urban, planted forest, coastal valley grassland, riparian woodland, coastal scrub, coastal dune slack, and coastal active dunes and foredunes. (Ex. 4, p. 6.6B-7.) The dunes and associated slack and scrub communities occur adjacent to the west border of the MBPP site, and extend north and south along the coast. (Ex. 197, p. 3-4.)

In addition to the Project site in Morro Bay, there are two off-site locations that Applicant will use for Project activities. These are the proposed construction storage and laydown area (39.2 acres) at Camp San Luis Obispo (Camp SLO), located 8 miles south of Morro Bay; and the proposed satellite parking area in the City of Morro Bay. (*Id;* Ex. 199, pp. 15-21.)

A number of species that are listed as species of special concern, threatened or endangered under the Federal Endangered Species Act (ESA) or the California Endangered Species Act, (CESA) have the potential to occur on or near the site. Applicant conducted surveys of special status species both prior to and since filing the AFC, which are summarized in its testimony. (Ex. 199, App. 1.)

Due to the presence of sensitive species in the areas affected by the Project, the habitats for these species received particular attention. One of these is dune scrub habitat. Most of the coastal dune scrub vegetative community at and near the Project site is in a disturbed or degraded state. There is a larger adjacent complex of coastal scrub extending from the Project's western border to the west and northwest along the dunes and beaches of Estero Bay. A one-acre patch of disturbed dune scrub is located near Tanks 3 and 4. (Ex. 4, p. 6.6B-18.) This area was documented to contain burrowing owl in 1999, and may provide suitable habitat for the Morro shoulderband snail (MSS) (*Helminthoglypta walkeriana*) and California legless lizard (*Anniella pulchra*). (*Id*; Ex. 197, p. 3-5.)

Ice plant (*Carpobrotus* or *Mesembryanthemum* sp.) is an exotic invasive succulent, which has been introduced in California. In the vicinity area around the proposed Project it grows in diverse locations, including dune habitats and is found on-site as well. (Ex. 4, p. 6.6B-10, 6.6B-15-16.) The federally endangered Morro shoulderband snail has recently been found in ice plant vegetation near the proposed Project. Staff biologists testified that while ice plant is generally undesirable compared to native plant species, it is a sensitive habitat for the MSS and should be protected when it is potentially inhabited by an endangered species. (Ex. 197, p. 3-5.)

Terrestrial Biological Resources Table 1 below lists all species of special status in the Project area. However, certain species received particular attention during the evidentiary hearings. The MSS is a federally endangered species that inhabits the vicinity of the MBPP site. (Ex. 4, pp. 6.6B-67 to 69.) As such, all adverse impacts to this species must be avoided, minimized, and mitigated as necessary. Protocol-level surveys of the MSS were conducted in January, February, and April of 2001. The surveys detected six empty shells of the snail on the MBPP property. These shells were found in the southeastern portion of the site in an area that is heavily disturbed. However, no live or dead snails were

detected in the dune strand and dune scrub habitats along the western edge of the site. (Ex. 197, p. 3-9.)

The snowy plover (*Charadrius alexandrinus*) is a shorebird that is federally threatened and is a California Species of Special Concern. Critical habitat has been designated for this shorebird on the beach and dunes west of the Project site. The snowy plover has nested in the area near Morro Rock as recently as 1997. The major causes of decline for this species include habitat destruction and habitat and nest disturbance due to human recreational activities. DPR conducts an ongoing program in the beach area to protect this species from human encroachment. (Ex. 197, p. 3-10.)

The peregrine falcon (*Falco peregrinus*) nests on Morro Rock west of the proposed project. This falcon is a federally de-listed endangered species, but is still listed as state endangered. In 2001, two nesting pairs were confirmed for the first time on the rock. This falcon species inhabits Morro Bay year-round and forages for avian prey in the general vicinity of the project area. (*Id*.) A burrowing owl (*Athene cunicularia*) inhabited the northwestern corner of the MBPP site in 1999. This species is a California Species of Special Concern and a Federal Species of Concern. (*Id*.)

The area also provides potentially suitable habitat for special status reptiles and amphibians, including the federally threatened California red-legged frog (*Rana aurora californi*a). However, species-specific surveys conducted in the summer of 2000 did not find individuals, egg masses, or populations of this species on-site. (Ex. 4, pp. 6.6B-71 to 72.) All adverse impacts to these species and their habitats must be avoided and/or mitigated as necessary.

In conjunction with USEPA and the USFWS, Applicant decided to proceed with a formal, rather than informal, consultation under Section 7 of the Endangered Species Act. This involved the following species: the endangered Morro

shoulderband snail, the threatened California red-legged frog, the endangered tidewater goby, and the threatened southern sea otter. Impacts to the brown pelican may also be addressed. Applicant was motivated to prefer formal consultation based on 1) the risk that all Project-related activities would have to cease if a federally-listed species were encountered in the Project site under informal consultation; and 2) Duke's preference to secure incidental take authorization for construction and operation of the Project even though minimization measures make the potential for a "take" extremely low. (Ex. 199, p. 52.) By means of a letter dated April 10, 2003, USEPA requested formal consultation under Section 7 for the Project.

TERRESTRIAL BIOLOGICAL RESOURCES Table 1
Terrestrial and Marine/Estuarine Special Status Species
Likely to Occur within One Mile of MBPP

Occurs within one mile	Scientific Name	Common Name	Legal Status Federal/State Other
Plants			
N	*Arctostaphylos morroensis*	Morro manzanita	FT
D	Calochortus clavatus var. clavatus	Club-haired mariposa lily	CNPS 4
N	Calystegia subacaulis ssp. Episcopalis	Cambria morning-glory	CSC CNPS 1B
N	*Chorizanthe breweri*	Brewer's spineflower	CNPS 1B
N	*Cirsium fontinale var. obispoense*	Chorro creek bog thistle	FE
D	Cordylanthus maritimus ssp.Maritimus	Salt marsh bird's-beak	FE /SE CNPS 1B
N	*Dithyrea maritima*	Beach spectacle-pod	FSC/ST CNPS 1B
D	Dudleya abramsii var. bettinae	San Luis Obispo serpentine dudleya	FSC CNPS 1B
D	Dudleya blochmaniae ssp. Blochmaniae	Blochman's dudleya	FSC CNPS 1B
N	*Erigeron blochmaniae*	Blochman's leafy daisy	CNPS 1B
N	*Eriodycton altissimum*	Indian knob mountainbalm	FE/SE
D	Erysimum insulare ssp. Suffrutescens	Suffrutescent wallflower	CNPS 4

N	*Layia jonesii*	Jones's layia	FSC CNPS 1B
N	*Malacothrix incana*	Dunedelion	CNPS 4
D	*Mucronea californica*	California spineflower	CNPS 4
D	*Suaeda californica*	California seablite	FE CNPS 1B
Fish			
D	*Oncorhynchus mykiss*	Central California coast steelhead trout	FT
D	*Eucyclogobius newberryi*	Tidewater goby	FE/CSC
Mollusks			
D	Helminthoglypta walkeriana	Morro shoulderband snail	FE
Insects			
D	*Icaricia icarioides moroensis*	Morro Bay blue butterfly	FSC
Herpetofauna			
N	*Taricha torosa*	California newt	CSC
D	*Anniella pulchra*	California legless lizard	FSC/CSC
D	*Clemmys marmorata pallida*	Southwestern pond turtle	FSC/CSC
D	*Rana aurora californica*	Red-legged frog	FT
N	*Scaphiopus hammondi*i	Western spadefoot toad	FSC/CSC
D	*Phrynosoma coronatum*	Horned lizard	FSC/CSC
D	*Thamnophis hammondii*	Two striped garter snake	CSC
Birds			
D	*Gavia immer* (nesting)	Common loon	CSC/MNBMC
D	*Pelecanus occidentalis*	California brown pelican	FE/SE
D	*Phalacrocorax auritus* (rookery)	Double crested cormorant	CSC
D	*Ardes herodias* (rookery)	Great blue heron	CDFSC
D	*Botaurus lentiginosus*	American bittern	MNBMC
D	*Accipiter cooperi*	Cooper's hawk	CSC
D	*Accipiter striatus*	Sharp shinned hawk	CSC
D	*Circus cyaneus*	Northern harrier	CSC
D	*Elanus leucurus*	White-tailed kite	FP

D	*Aquila chrysaetos*	Golden eagle	CSC
D	*Falco peregrinus* (nesting)	Peregrine falcon	FE Delisted/SE
N	*Laterallus jamaicensis*	California black rail	FSC/ST
N	Rallus longirostris obsoletuss	California clapper rail	FE/SE
D	*Charadrius alexandrinus* (nesting)	Western snowy plover	FT/CSC
D	*Sterna antillarum*	California least tern	FE/SE
D	*Brachyramphus marmoratus*	Marbled murrelet	FT/SE
D	*Athene cunicularia*	Burrowing owl	FSC/CSC
D	*Empidonax traillii*	Willow flycatcher	SE
D	*Lanius ludovicianus*	Loggerhead shrike	FSC/CSC
D	*Riparia riparia*	Bank swallow	ST
D	*Dendroica petechia*	Yellow warbler	CSC
Mammals			
N	*Dipodomys heermanni morroensis*	Morro bay kangaroo rat	FE/SE
D	*Neotoma fuscipes (luciana)*	Monterey dusky-footed woodrat	FSC/CSC
N	*Neotoma lepida intermedia*	San Diego desert woodrat	FSC/CSC
D	*Enhydra lutris*	Southern sea otter	FT

Source: Exhibit 4, Table 6.6B-2; Exhibit 197, pp. 3-6 through 3-8.

D = the species has been documented to occur historically within 1 mile radius of MBPP site.
N = there is no available historical record of the species' occurrence within 1 mile radius of MBPP site. However, this lack of data does not completely preclude the possibility that the species may occur in suitable habitat(s).
Status legend: CNPS List 1B = Plants rare or endangered in California and elsewhere,
CNPS4 =Plants of limited distribution (California Native Plant Society 1994), FE = Federally listed Endangered, FT = Federally listed Threatened, FSC = Federal species of concern,
FPT = Federally Proposed (Threatened), FC = Federal Candidate, CSC = CDFG species of special concern, CDFG-sensitive = Species that warrant special protection during timber operations, FP = CDFG fully protected, ST = State listed Threatened, SC = State Candidate (Endangered), SE = State listed Endangered, MNBMC = Fish and Wildlife Service Migratory Nongame Bird of Management Concern.

Potential causes of indirect impacts to terrestrial species include air pollution, noise, lighting, traffic, erosion, and collisions of birds with facility structures. Indirect impacts from noise or air pollution may also impact Morro Rock. Indirect impacts can result from construction and demolition activities, as well as from maintenance and operation of the Project. If not properly mitigated, indirect adverse impacts may reduce the effective size of remaining habitats by decreasing the quality, connectivity, and safety of habitats for wildlife (i.e. resting, nesting, foraging, roosting) on-site and on adjacent lands. (Ex.197, p. 3-22.)

2. Off-Site Construction, Laydown, and Satellite Parking Areas

Applicant proposes to use three areas at Camp SLO for the storage of equipment related to construction of the Project. In total, the three areas are approximately 39.2 acres in size. Roughly 30 acres in parcels C/D and E represent grassland vegetation. The southwestern border of Parcel E is contiguous with riparian habitat that supports special status species such as the Morro shoulderband snail, California red-legged frog, and least Bell's vireo. During use of the Camp San Luis Obispo site, vehicle use will result in noise and air pollution produced by the traffic and could potentially cause direct (mortality) or indirect (disruption of behaviors, degradation of habitat quality) harm to sensitive species in the area. Habitat mitigation and avoidance and minimization measures are required to ensure less than significant impacts to the sensitive species. (Ex. 197, p. 3-26.)

On March 14, 2002 several live Morro shoulderband snails were found at the fringe of laydown areas in Area E. As a result, protocol surveys were conducted to determine the abundance and distribution of the snail at Camp San Luis Obispo. Non-protocol level surveys were conducted within surrounding habitats and nearby habitats. In total, 39 snails were found within the Staging areas E and C/D. Further scheduled surveys will determine details of a final impacts analyses and mitigation requirements in consultation with USFWS and CDFG. (Ex. 197, p. 3-27.)

Project-related activity at the off-site satellite parking area will be temporary in nature and the area will revert to agricultural production after the Applicant is finished using the area. However, Staff testified that there is a potential for significant adverse impacts to the designated critical habitat of the California red-legged frog. In addition, there will be a temporary disturbance of approximately 5 acres of agricultural foraging and nesting habitat for special status species. Staff has concluded that biological impacts from the satellite parking area will be insignificant provided appropriate mitigation measures are implemented. (*Id*.)

In summary, the impacts of the Project to terrestrial biological resources are potentially significant because there are endangered species as well as ESHAs in the three areas impacted by the Project. The direct impacts of permanent and temporary habitat loss will require some habitat compensation and mitigation in order to bring impacts to insignificant levels. Indirect impacts of construction, operation and maintenance to special status species can be mitigated to insignificant levels. (*Id*.)

Public Comment

Colleen Johnson, a resident of Morro Bay, urged the Commission to consider alternative sites for the Project, outside of Morro Bay. She also voiced skepticism about using any habitat enhancement plan to mitigate impacts from the Project upon the estuary. (6/4/02 RT 223-226.) **Mandy Davis,** of Morro Bay stated her belief that paving of the Embarcadero dirt road would add to impacts, especially during construction. She also voiced concern for the potential impacts of Project air emissions on peregrine falcons nesting on Morro Rock. In addition, she is concerned about Project impacts to the riparian area adjacent to the Project site. (*Id.* RT 323-332.)

Nelson Sullivan encourages more scrutiny of the impingement of jellyfish in the existing cooling water intake structure. He recalled that in the past jellyfish had

clogged the intakes, forcing a plant shutdown. (*Id.* 332-334.) **Gary Johnson** identified himself as an active Audubon Society bird watcher, noting that Morro Bay is usually one of the top areas in California for number of bird species sighted annually. He believes that impacts to the snowy plover are a result of humans bringing their pet dogs and horses to the beach, thus harassing the birds. (*Id*. 334-338.)

Mike Walgren, with the California Department of Parks and Recreation, stressed that in the Morro Bay area only five known populations of the endangered Morro shoulderband snail exist. Three of these areas will be directly impacted by the Project. These include the satellite parking area, the laydown area and the area next to the power plant site. (*Id*. RT 339.) He stressed that little is known about this endangered species and its habitat requirements, noting that until just a few months prior to the hearing, the MSS was thought to live on only a single type of plant specie. He also voiced his concern regarding "edge effects" resulting from the Project paving the Embarcadero dirt road. He noted that species which could suffer from increased use of the road include the MSS, the Morro blue butterfly, the globos dune beetle, the coast horned lizard, and potentially other species. Regarding the snowy plover, he stated that Duke's proposal to fund fencing for a period of five years was not acceptable to DPR, since the birds may not use the areas for several seasons, only to return later to locate there for foraging and nesting. (*Id.* 338-340.)

Commission Discussion

1. Dune Scrub Compensatory Mitigation

Staff biologists testified that Applicant's proposed habitat mitigation, submitted to fulfill mitigation requirements for disturbance to coastal dune scrub habitat, was not adequate based on the quality, size, and lack of connectivity to other habitat. The Staff witness testified that the proposed mitigation area is more likely to

function as a garden or visual display than a functioning and viable habitat, able to support wildlife species over long periods of time. Thus, Staff did not support the Applicant's proposed Coastal Dune Scrub Restoration Plan as a viable habitat mitigation plan for reducing impacts to dune scrub habitats to less than significant levels. (Ex. 197, p.3-33.)

Instead, Staff proposed the partial or complete fulfillment of mitigation through an ongoing, regional habitat restoration/conservation program and recommended Applicant contribute to the intensive restoration efforts the DPR is conducting on 26 acres of dune scrub north of the Project facility. This parcel was recently found to support living and reproducing Morro shoulderband snails. Staff proposed that funding would be dispersed through the Morro Bay National Estuary Program. Biologists for Commission staff determined that the various Project impacts to dune scrub habitat added up to a total of 4.5 acres at a total cost of $254,675. The Staff mitigation recommendation is derived as follows:

- 3.0 acres of MSS iceplant habitat at the existing tank farm, which would be impacted by the new power block construction and be compensated at a 0.5:1 mitigation ratio at $60,000 per acre. This totals 1.5 acres and $91,500.

- 0.28 acre of dune scrub habitat impacted by fence installation, which is to be compensated at an overall 4:1 mitigation ratio at $60,000 per acre for acquisition and $30,000 per acre for restoration. This totals 1.12 acres and $59,920.

- 0.77 acre of dune scrub habitat impacted by access road construction, which is to be compensated at a 0.5:1 mitigation ratio at $60,000 per acre. This totals 0.385 acre and $23, 485.

- 0.33 acre of dune scrub habitat impacted by road widening which is to be compensated at an overall 4:1 mitigation ratio at $60,000 per acre for acquisition and $30,000 per acre for restoration. This totals 1.32 acres and $70,620; and

- 0.3 acre of dune scrub habitat impact by the new front gate access road, which is to be compensated at a 0.5:1 mitigation ratio at $60,000 per acre. This totals 0.15 acre and $9,150 total. (*Id*., p. 3-38, Table 3.)

The Coastal Commission, relying heavily on the Final Staff Assessment prepared by the Energy Commission staff (Ex. 197, pp. 3-1, *et. seq*.), recommends that the Energy Commission include the conditions proposed by Staff. (The Coastal Commission also recommended two additional conditions, which are discussed below at pp. 17 - 19, under the heading "Additional Conditions Recommended by the Coastal Commission.") [49]

While Applicant has agreed to the $70,620 mitigation costs associated with 0.33 acre of dune scrub habitat impacted by road widening, Duke disputes the other dune scrub mitigation measures. (6/4/02 RT 114-120.) Applicant argues that the disputed areas are neither inhabited by any listed species nor immediately adjacent to areas that are inhabited. (*Id*. RT 306.) Duke states that the areas in question have all been thoroughly surveyed according to established protocols and no evidence of occupation by any listed species were found. (Ex. 203.) For example, the nearest identified location of the MSS is on the other side of Morro Creek nearly a mile from the site. (Ex. 203, p. 5.) Duke also notes that none of the areas in dispute are designated "critical habitat" or Environmentally Sensitive Habitat Areas that must be protected for their own sake, regardless of any impact on species.

Duke's position is that disturbing habitat is not, by itself, a "taking" pursuant to the Federal or State endangered species laws, nor a significant impact under CEQA. Applicant reasons that if a sensitive species is not using the habitat, then destruction of the habitat cannot amount to harming a species under federal law nor constitute an impact under CEQA. Duke argues that under CEQA there is no "adverse impact" to a species unless an actual nexus to impact on the species—not merely "habitat"—is shown. Furthermore, Duke argues that Staff has not shown that the Project will "restrict the range" of the MSS (or any other species). (6/4/02 RT 32-34.)

[49] The Coastal Commission's recommendations concern Staff-proposed Conditions BIO-T-4, 5, 14, 15, 17, and additional Conditions BIO-T-18 and 19.

We examine below each of the contested habitat compensation proposals for dune scrub habitat.

a. 3.0 Acres of Iceplant at Site of Proposed Power Block

The Duke witnesses argued against the requirement for compensatory mitigation to replace destruction of this habitat by Project construction. Applicant's reasons include: the land is not designated critical habitat, no MSS are present at the site, as an existing tank farm the area is highly fragmented and is subject to continual maintenance, and the nearest known MSS population is about .9 mile away. (6/4/02 RT 118-119.)

We do not dispute any of Applicant's allegations regarding this area. Nevertheless, we observe that in evaluating this particular location, we are addressing identified (although degraded) MSS habitat in the form of iceplant which, although unoccupied, is within the identified range of the MSS. Furthermore, the site has been identified by USFWS as sufficiently close to known MSS populations as to be considered "suitable habitat". (6/4/02 RT 130.) CDFG and DPR representatives also spoke in favor of this, and other compensation conditions. (*Id.* RT 321-322; 340-341.) However, we are particularly persuaded by the evidence showing that little is known about the habitat and locations of the MSS and that assumptions about its habitat have recently been proven wrong. (*Id*. RT 233, 340.)

The unknowns surrounding this sensitive species, the fact that the area is within identified range of the MSS, and that the tank farm iceplant constitutes potential habitat within that range leads us to conclude that sufficient nexus exists between the Project's destruction of the iceplant acreage and the need to provide compensation. We find that the required compensation ratio has been

appropriately adjusted down to reflect the fact that this area constitutes degraded habitat, and therefore the mitigation is proportional to the impact. We must agree with the representative of CDFG that given the unknowns surrounding the range and habitat of the MSS, it is better to be safe than sorry. (*Id*.) Accordingly, we have required compensation for the Project impacts to this area, as recommended by Staff in Condition BIO-T-14 Item 8.a.

b. Other Disputed Dune Scrub Habitat Areas

However, there are several mitigation measures included in Condition BIO-T-14 Item 8.a which we believe Staff has not justified; for similar reasons, we believe that the Coastal Commission recommendations for those mitigation measures are not "feasible" as is required by Section 25523(b) (see p. 10 above). One of these relates to the permanent fencing required by the USFWS to reduce impacts to the MSS and to the western snowy plover. Currently, there is no protection of the dune habitat west of North Embarcadero, which results in uncontrolled human and domestic animal access to that area. Duke's installation of the permanent fence will therefore restrict such access and create an overall environmental benefit. Since the fence itself serves to mitigate an existing problem, Staff is seeking mitigation upon mitigation. Applicant's installation of the permanent fence will reduce an existing impact due to human and domestic animal intrusion upon the dune habitat. We are not persuaded that the fencing itself will create an impact for which Applicant must provide compensatory habitat. Because there is no impact, there is no mitigation required under CEQA. Moreover, in the context of the Coastal Commission report under section 25523(b), mitigation is not "feasible." That is because where there is no impact, mitigation (1) is not "capable of being accomplished in a successful manner" (see Cal. Code Regs., tit. 14, § 15364); and (2) is wholly disproportionate to the "impact" and therefore legally infeasible as violative of the constitutional principle

that governmentally-required mitigation must have a reasonable nexus with and proportion to the impact to which the mitigation is addressed. (See *Dolan v. City of Tigard* (1994) 512 U.S. 374; *Nollan v. California Coastal Comm*. (1987) 483 U.S. 825.)

Staff also seeks compensation for the loss of habitat resulting from Applicant's plan to pave an existing dirt road, as part of the Embarcadero extension. Staff testified that if not paved, the road could "revert to dune scrub habitat." (6/4/02 RT 265, 271:4.) However, the evidence establishes that the road may have existed for the last 40 years. (6/4/02 RT 313.) It appears as a dirt road on a Coastal Land Use Plan from 1982. (Ex. 226.) The road is presently used by automobiles and is maintained on a routine basis by the City of Morro Bay. (*Id*. RT 315.) In fact, it is the means of vehicle access to a boat repair facility and to the beach. (*Id*. RT 104.) The City of Morro Bay has no plans to close the road in the future. (*Id*. RT 314.) Yet remarkably, Staff describes this dirt road as "degraded dune scrub habitat" and seeks compensation for it based on Duke's proposal to pave the road. (*Id.* RT 257- 258.)

We find that the road is neither existing nor potential dune scrub habitat for sensitive species. Therefore, Applicant's paving of the road will have no significant impact which requires mitigation under CEQA. In addition, for the same reasons we discussed at pp. 235 – 236 above, the Coastal Commission's recommendation for such mitigation is not "feasible" under Public Resources Code Section 25523(b). ~~Thus, no compensation is called for~~

TERRESTRIAL BIOLOGICAL RESOURCES Table 2
Summary of Parties Compensation Positions and Commission Decision

Resource Impact	Acres	Comp. Ratio	Comp. Acres	M & M Endowment	Cost Per Acre	TOTALS		
						CEC STAFF /CCC	DUKE	COMMISSION
MSS Iceplant **D**	3.00	0.5	1.5	$1,500	$60,000	$91,500	$0	$91,500
Dune/Fencing **D**	0.28	3.0	0.84	$840	$60,000	$60,000	$0	N/A
Fencing/Restoration Acre **D**	0.77	1.0	0.28	$280	$30,000	$ 8,860	$0	N/A
Dune Road **D**	0.33	0.5	0.385	$385	$60,000	$23,485	$0	N/A
Road Widening **D**	0.33	3.0	0.99	$990	$60,000	$60,390	$60,390	$60,390
Restoration Acre **D***	0.3	1.0	0.33	$330	$30,000	$10,230	$10,230	$10,230
New Access Road **D**	2.71	0.5	0.15	$150	$60,000	$ 9,150	$0	N/A
Riparian/Indirect **R**	25	0.5	1.35	$1,350	$10,000	$14,850	$14,850	$14,850
Snowy Plover **D**	Nesting areas					Not to exceed $10,000/year/ Life-of-Project	Not to exceed $10,000/year/ 5 years	Not to exceed $10,000/year 10 years**
CSLO MSS **U**	25	0.5	37.5	$37,500	$5,000	$225,000	$0	$62,500
CSLO CRLF **U**	25	0.25	6.25	$6,200	$5,000	$37,500 (if triggered)	$37,500 (if triggered)	$37,500 (if triggered)

Legend:
Comp. = Compensation. The "Compensation Ratio" is the number of acres to be mitigated for each acre of impact.
M&M = Management and Maintenance ($1,000/year).
N/A = not adopted
D = dune scrub habitat
R = riparian habitat
U = upland grassland
*Restoration acre determined according to CDFG mitigation guidelines of 3:1 for habitat acquisition and 1:1 for restoration for a combined 4:1 ratio.
**Snowy plover protection and monitoring funds of $10,000 per year will be required for a ten-year period.

Duke also challenged Staff's requirement of compensation for a 0.3 acre spot associated with the proposed new front gate access road. The evidence establishes that this area is common, degraded grassland which is not rare, unique, or valuable habitat. (Ex. 199, p. 38.) No sensitive species have been found there and it is not designated as an ESHA. (6/4/02 RT 120.) Based on the evidence we find that this is not potential dune habitat for sensitive species. (*Id.*) Thus, Applicant's use of the area will not cause a significant impact and as a result, for the same reasons discussed in the previous paragraph, there is no justification for compensatory mitigation under CEQA and mitigation is not "feasible" under Section 25523(b).~~.~~

As a result of the determinations above, we have modified the acreage and costs for compensatory habitat found in Staff's proposal, supported by the Coastal Commission, for Condition of Certification BIO-T-14, Item 8.a. Table 2 shows a summary of the various parties' positions and the Commission's resolution of the matter. Table 3 totals the amount of money required for compensatory habitat mitigation for each type of habitat.

TERRESTRIAL BIOLOGICAL RESOURCES Table 3
Commission Compensation Summary

Habitat		**Compensation Amount**
Dune	BIO-T-14, Item 8.a.	$162,120
Upland	BIO-T-14, Item 8.c.	$ 62,500
Riparian	BIO-T-14, Item 8.b.	$14,850
Snowy Plover	BIO-T-15	Not to exceed $10,000 per year, for 10 years (adjusted for inflation)
Supplementary management funds - MBNEF		$20,000
Total (some changes may be made in values based on results of MSS surveys)		$259,470 (not including the Snowy Plover costs)

2. Additional Conditions Recommended by the Coastal Commission ~~Report~~

~~With respect to terrestrial biology, the Coastal Commission, relying heavily on the Final Staff Assessment prepared by the Energy Commission staff (Ex. 197, pp.~~

~~3-1, *et.seq.*) recommends that the Energy Commission include the conditions proposed by Staff and recommends two additional conditions.[50] As discussed above at pages 5-9, we have assessed the Coastal Commission's recommendations under CEQA, and we have included most of them, with the exception of those noted below.~~

~~Thus, r~~Regarding proposed Condition BIO-T-18, it is not feasible to require Applicant to demonstrate that *all* impacts to coastal dune scrub habitat will be avoided in paving and upgrading the Embarcadero Extension Road. We have therefore slightly modified the Coastal Commission language to BIO-T-18, so that impacts will be avoided to the greatest extent feasible. That is all that can be required under section 25523(b)'s command that we accept the Coastal Commission's recommendations unless they are infeasible (or would cause greater environmental impact).

The Coastal Commission ~~staff~~ also took issue with our slight modification of its recommended additional Condition of Certification BIO-T-18. The condition is intended to reconfigure the beach access road and paths to eliminate a 0.33-acre adverse impact to dune habitat. Duke and the City of Morro Bay have testified to their intentions to minimize impacts to the dune habitat and there exists no substantive disagreement on this condition. The Energy Commission's slight language change from that proposed by the Coastal Commission merely ensures that after receiving comments from the City and the Executive Director of the Coastal Commission, the CPM will determine that the Applicant's proposed design avoids impacts to the maximum extent feasible, rather than setting a potentially infeasible standard of no impacts whatsoever (see the preceding paragraph). Our intention was not in any way to dilute the CCC's proposal and we direct the CPM to give great weight to the recommendations of the CCC's Executive Director, especially regarding ways to design the shore access to

~~[50] Coastal Commission specific provisions include Conditions BIO-T-4, 5, 14, 15, 17, and additional Conditions BIO-T-18 and 19.~~

avoid harming the ESHA. The language change merely eliminates requiring access plans which are not feasible.

The Coastal Commission also recommended a new Condition to address the horizontal drilling under Willow Camp Creek to install gas pipelines; the condition would require a geotechnical report that evaluates the horizontal directional drilling activities under Willow Camp Creek and also identifies any clean-up measures if a "frac-out"[51] were to occur. However, section 6.3 of the AFC entitled "Geologic Hazards and Resources", includes a geologic investigation of the bridge site location with exploratory borings and cone penetration tests soundings. (Ex. 4, Fig. 6.3-4; Ex. 4, App 6.6-3.) In its comments on the PMPD the CCC ~~staff~~ states that the geologic report contained in the AFC is based on borings located too far distant from the Willow Camp Creek site and requests that its recommended language contained in Ex. 320 be substituted for the language in the PMPD. To ensure accurate geotechnical information and to minimize the risk of a frac-out in an ESHA, we have adopted the language for Condition of Certification BIO-T-19 recommended by the CCC.

3. Conditions

The various parties reached agreement on a number of the Conditions of Certification. The agreed-upon Conditions include: BIO-T-1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13 (except item 20), BIO-T-16, 17. We have made modifications to these Conditions as appropriate to reflect the consensus of the parties. However, a number of matters remained disputed following the evidentiary hearings and briefs. We address these disputed Conditions below.

With respect to **BIO-T-6**, Applicant asks that the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) not include a discussion of the

[51] The term "frac out" refers to a ground rupture associated with drilling activities. Such a rupture can result in uncontrolled spilling of drilling fluids onto the ground surface or into surface waters.

removal of transmission conductors and power plant facilities in the event of facility closure. (Ex. 199, 26-27.) Staff disagrees, and testifies that in the event of facility closure, removal of major structures is an option which can have important biological implications. (Ex. 198, p. 4.) Staff states that this is standard condition language intended to insure that biological impacts are addressed in closure plans. We find that the Staff position is reasonable and have adopted Staff's proposed language from the FSA. (Ex. 197, p. 3-50.)

BIO-T-13, Item 20 requires that construction activities which create high noise levels (i.e. >70 dbA) be restricted on weekdays to between 7 a.m. and 7 p.m. and between 9:00 a.m. and 5:00 p.m. on weekends. Duke requests that the weekend start time be changed to 8:00 a.m. (Ex. 199, p. 31.) We must point out that this Condition, as proposed by Staff in the FSA (Ex. 197, p. 3-53; Ex. 198, p. 6.), is consistent with Condition of Certification NOISE-8 of this Decision, which restricts noisy construction on weekends and holidays to the hours of 9 a.m. to 5 p.m. In the interest of protecting the Morro Bay community and to maintain consistency within this Decision, we deny Applicant's request and adopt the weekend hours proposed by Staff.

BIO-T-14, Item 8.a addresses compensation for Project impacts to dune scrub habitat and is discussed above in detail.

Condition **BIO-T-14, Item 8.c** addresses compensation for Project impacts to sensitive species at the Camp San Luis Obispo temporary laydown area. The species involved include the California red-legged frog, the Morro shoulderband snail (MSS), and the least Bell's Vireo. In Staff's view, Applicant's temporary use of the area may adversely impact foraging, nesting, and dispersal habits for these species. In addition to habitat compensation, Staff is also recommending that Applicant practice avoidance and mitigation measures to ensure less than significant impacts to sensitive species. Staff points out that recent surveys have determined the site is significant habitat for the MSS, which was not previously

known to exist at Camp San Luis Obispo. Ultimate disposition of this matter may await the Biological Opinion of the United States Fish and Wildlife Service. (Ex. 197, p. 3-26; Ex. 198, p. 6.)

Applicant argues that its proposal for Camp SLO mitigation is roughly proportional to the impacts of the Project on the MSS and satisfies the requirement that there be an essential nexus between mitigation measures and a legitimate governmental interest. The Duke witness testified that species-specific surveys conducted thus far in the staging and laydown areas surrounding Camp SLO found the MSS only at the fringes of these areas. Within these fringes, MSS were found only in moist areas, such as beneath structures, rocks, and debris. (Ex. 199, p. 41.) The witness claimed that finding the MSS in these fringe areas is very unusual given that the Camp SLO high clay content grassland is highly atypical of areas previously believed to support the MSS. On this basis, Duke submits that Camp SLO is not high quality MSS habitat and that the proposed financial mitigation should be deleted and the Condition reduced to avoidance measures and restoration of the staging and laydown areas to grassland habitat. Although this results in reducing the amount of habitat compensation funding recommended by the Coastal Commission, it is consistent with the Commission's statement that ~~with the~~"[s]ome funding or acreage levels may change pending receipt of needed information and completion of environmental analysis." (Ex. 320, p. 45.) Moreover, this adjustment will ensure that the mitigation measures will be roughly proportional to the impacts of the project and that there will be sufficient nexus between the mitigation required and the impact to the habitat of sensitive species

We find that the temporary nature of the impacts of construction laydown activities and the atypical[52] MSS habitat found at Camp SLO demand a

[52] Grassland habitat with high content clay soils generally is not included in what is considered high quality MSS habitat. *See id*.

downward adjustment to Staff's (and the Coastal Commission's) habitat compensation recommendation. This adjustment will ensure that the mitigation measures will be roughly proportional to the impacts of the Project and that there will be an essential nexus between the mitigation measure and our obligation to protect the habitat of sensitive species.[53] Nevertheless, the amount of compensation for habitat may ultimately have to be adjusted further, pending the determination of the USFWS in its Biological Opinion. (Ex. 197, p. 3-26 to 3-27; Ex. 198, p. 6.)

With respect to **BIO-T-15**, Applicant disputed Staff's (and the Coastal Commission's) position that funding for fencing to protect snowy plover habitat should continue for the life of the Project. Staff found that the proposed road, bicycle and pedestrian paths, and bridge over Morro Creek would contribute to degradation of nesting habitat and decreased nest and plover survival in this area.[54] (Ex. 197, p. 3-18.) Although Applicant claims that the Project is unlikely to affect the plover, it has agreed to participate in a seasonal fencing program for a period of five years, with the possibility of terminating payments after that time if there is no evidence that snowy plovers are using the habitat area in question. (Ex. 199, p. 43-44.) Staff argues that it is not appropriate to limit mitigation to only 5 years because the impacts of the Project will continue for the life of the Project and therefore the mitigation should continue for the same period.

[53] The dollar amount of the adjustment is reflected in Terrestrial Biology Resources Tables 2 and 3.

[54] The Draft Recovery Plan for the plover lists Morro Strand State Beach and Atascadero State Beach, just north of the power plant site, as critical nesting area. (Ex. 197, p. 3-18.) Staff's position is supported by a witness from the USFWS, who stated that her agency is assuming that the plover historically did occur in the area. California Department of Parks and Recreation (DPR) also supported Staff's recommendation. (6/4/02 RT 131, 341-342.) However, in a letter to the Commission dated June 25, 2003, the USFWS stated that after an internal review of the proposed Project, and a discussion with the USEPA, the USFWS had determined that the Project, "… would have no effect or not likely effect the western snowy plover." The letter states that the EPA will make a final determination on the western snowy plover following further analysis. (Letter from USFWS Deputy Field Supervisor Catrina Martin to CEC Hearing Officer Gary Fay, dated 6/25/03; *see also* transcript of 6/30/03 RT 25:22-26:10.)

We are willing to give the benefit of the doubt to a mitigation plan where sensitive species, such as the snowy plover, are involved. However, in this instance, the best evidence that the area in question is actually habitat for the plover lies in the fact that it is mentioned as part of the recovery plan and that USFWS staff "assumes" that the area constitutes habitat. On the other hand, the evidence is undisputed that, while plover have nested north of the MBPP and northwest of Atascadero Road, no Snowy Plover have nested in southern Morro Strand Beach (the area west of the Project site) since at least 1997, if ever. (Ex. 199, p. 43; 6/4/02 RT 113, 131, 145, 167.) In addition, it is likely that the installation of exclusion fencing along the west side of the road north and south of Morro Creek will add permanent protection to the potential plover nesting area.

For these reasons, we have rejected Staff's funding requirement for the life of the Project absent a determination that the assumed habitat area is actually used by the snowy plover. To create a sound foundation for a determination of habitat use, we have required Applicant to pay for fencing for a period of ten years, rather than Duke's recommended five-year period. Even if Applicant were to commence work on the Project immediately upon certification, this would provide a window of at least 16 years[55] in which to evaluate whether the snowy plover considers the site suitable habitat. If at the end of that period the fencing cannot be shown to have encouraged plover nesting on Morro strand Beach, Applicant may, with the concurrence of USFWS and the CPM, discontinue paying for the fencing. The objective of this condition is to continue funding for the snowy plover fencing only if the fencing can protect actual nesting habitat – and only if the fencing can accomplish that result is the mitigation "capable of being accomplished in a successful manner" and therefore "feasible" under section 25523(b) (see p. 10 above). -

[55] The six years since 1997, plus the additional ten-year payment term of Condition **BIO-T-15**, equals 16 years.

The Applicant and Staff agreed that Condition **BIO-T-16** is not necessary and should be deleted. (6/4/02 RT 168, 228.) We agree and have done so.

In commenting on the PMPD, Staff points out that applying ten percent of the habitat compensation program towards administration may not be adequate when applied to the reduced amount of total compensation funding determined by the PMPD to be supported by the evidence. This is because as the amount of compensatory acreage is decreased, the administrative costs per acre will increase. In a subsequent letter to the Morro Bay AFC Committee, the Executive Director of the Morro Bay National Estuary Program (MBNEP) supported the Staff comment. The letter stated that in the experience of the MBNEP, the costs of the plan called for in the PMPD are not directly proportional to the total amount of compensatory funding. The MBNEP notes that an additional $20,000 is needed to make up for the proportional reduction in administrative funds. We have increased the 10 percent figure (which amounts to $23,947 for management) by adding the $20,000 recommended by the MBNEP in order to properly carry out the terms of the condition.

The PMPD comments of the Coastal Commission staff express concern about any variation of the language in the PMPD from that contained in the Energy Commission staff's FSA for Conditions **BIO-T-4** through **BIO-T-17**. Some of the concern expressed in the CCC's letter appears misplaced. Condition **BIO-T- 4** is identical to the CCC's and the FSA's recommendation. The only change made to Condition **BIO-T-5** was to add the City of Morro Bay in a review and comment role. As noted in the discussions above, Condition **BIO-T-14** reflects the amount of compensatory mitigation funding ~~which the record indicates is necessary to mitigate adverse impacts and is~~ that is feasible. ~~Moreover, to require any greater amount could, we believe, raise Constitutional issues concerning the proportionality of the required mitigation. [See, *Dolan v. City of Tigard*, 512 U.S. 374 (1994); see also *Nollan v. California Coastal Comm.*, 483 U.S. 825 (1987).] Given that the evidence shows a lack of proportionality in the condition proposed~~

by the Coastal Commission, we find that aspect of the proposed funding condition legally infeasible. . However, the total amount noted in the PMPD has been raised by $20,000 to ensure that adequate management and administrative funds are available for administering the MBMCP.

Condition BIO-T-15 provides funding to protect potential snowy plover habitat. Rather than requiring $10,000 per year for habitat fencing for the life of the Project, as recommended by the CCC and the CEC staff, we have required the annual funding for a period of 10 years. If at the end of this time, there is no evidence of the fenced area being used as plover habitat, the funding may end. If, however, the U.S. Fish and Wildlife Service and the CPM determine that the fenced area is used by the snowy plover, the funding would continue. As discussed above, wWe find that the 10-year mandatory funding period is the maximum period that is supported by the evidence of record and that is feasible under section 25523(b). However, the PMPD language stated that after 10 years the Applicant could terminate funding "in consultation" with the USFWS and the CPM. We have revised that language, substituting "in concurrence", to clarify that a determination of nonuse by the snowy plover will not be made by the Applicant alone – a change that strengthens the Condition. Finally, tThe CCC also recommended the FSA language contained in Condition **BIO-T-17**. That condition provided mitigation for impacts to the MSS and the snowy plover along the construction access road. In fact, we have adopted the FSA language with one minor exception. In subsection 4 the words, "After construction of the project is complete…" were added to clarify that *after* the construction phase is complete, the bridge over Morro Creek will only be available for pedestrians, bicyclists, and emergency vehicles. This is essentially a nonsubstantive change to the recommendation of the Coastal Commission.

FINDINGS AND CONCLUSIONS

Based on the evidence of record and assuming proper implementation of the Conditions of Certification which follow, we make the following findings and conclusions.

1. In light of the unknowns surrounding the Morro shoulderband snail (MSS), the Project's location within the identified range of the MSS, the potential iceplant habitat within that range located at the existing tank farm, and the Project's proposal to permanently eliminate that potential habitat, sufficient nexus exists between the Project's destruction of the iceplant acreage and the need to provide compensatory habitat for the MSS.

2. The Embarcadero dirt road is neither existing nor potential dune scrub habitat for sensitive species and Applicant's paving of the road will have no significant impact which requires mitigation.

3. The 0.3 acre degraded grassland associated with the new front gate access road is not valuable habitat for sensitive species and requires no mitigation.

4. The Project will not impose significant adverse effects on any protected plant communities or special status species.

5. The Project will not impose significant adverse effects on any protected or special status species of mollusks, insects, herpetofauna, birds, or mammals.

6. The measures specified in the Conditions of Certification will adequately mitigate the potential direct, indirect, and cumulative adverse effects of the Morro Bay Power Plant Project upon terrestrial biological resources to below a level of significance.

7. With the implementation of the mitigation measures, the Project will conform with all applicable laws, ordinances, regulations, and standards governing terrestrial biological resources.

We conclude ~~that~~ (1) that implementation of the Conditions of Certification below will (a) ensure that construction and operation of the Morro Bay Power Plant Project will not create any significant direct, indirect, or cumulative adverse impacts to terrestrial biological resources and (b) implement all of the feasible

recommendations of the Coastal Commission under Sections 25523(b) and 30413(d); and (2) ~~, and~~ with the implementation of those Conditions, that the Project will conform with all applicable laws, ordinances, regulations, and standards relating to terrestrial biological resources as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

Designated Biologist Selection

BIO-T-1 The Project Owner shall submit the resume, including contact information, of the proposed Designated Biologist to the CPM for approval. The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. At least one year of field experience with biological resources found in or near the project area; and
4. An ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resources tasks that must be addressed during Project construction and operation.

Verification: The Project Owner shall submit the specified information at least 60 days prior to the start of any site (or related facilities) mobilization. Site and related facility activities shall not commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, then the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist.

Designated Biologist Duties

BIO-T-2 The Designated Biologist shall perform the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities:

1. Advise the Project Owner's Construction/Operation Manager, supervising construction and operations engineer on the implementation of the biological resources Conditions of Certification;
2. Be available to supervise or conduct mitigation, monitoring, and other biological resources compliance efforts, and supervise trained and approved biological monitors, particularly in areas requiring avoidance or containing sensitive biological resources, such as wetlands and special status species or their habitat;
3. The Designated Biologist and Biological Monitors shall be thoroughly familiar with the Biological Conditions of Certification and the BRMIMP;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. Trained and approved biological monitors may also be authorized by the Designated Biologist to perform this duty. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (parking lots) for animals in harms way. These inspections may be conducted by monitors approved by and working under the Designated Biologist's supervision, provided the monitors receive appropriate, CPM-approved training prior to conducting such inspection and the Designated Biologist is available for consultation on an as-needed basis if a State or federal-listed species is found or is determined to be potentially present where positive identification of the species cannot be easily determined;
6. Notify the Project Owner and the CPM of any non-compliance with any biological resources Condition of Certification; and
7. Respond directly to inquiries of the CPM regarding biological resource issues.

Verification: The Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted in the Monthly Compliance Reports. Qualified Biological monitors shall be approved by the CPM and training shall be verified according to procedures established in the BRMIMP.

During Project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

Authority of the Designated Biologist and Biological Monitors

BIO-T-3 The Project Owner's Construction/Operation Manager shall act on the advice of the Designated Biologist to ensure conformance with the biological resources Conditions of Certification. If required by the Designated Biologist or Biological Monitors, the Project Owner's Construction/Operation Manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

The Designated Biologist and Biological Monitors shall:

1. Require a halt to all activities in any area when determined that there would be adverse impact to biological resources if the activities continued;
2. Inform the Project Owner and the Construction/Operation Manager when to resume activities; and
3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the halt.

Verification: The Designated Biologist must notify the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The Project Owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the Project Owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the Project Owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-T-4 The Project Owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the Project site or any related facilities during site mobilization, ground

disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the Project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures;
5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any site (or related facilities) mobilization, the Project Owner shall provide to the CPM two (2) copies of the WEAP and all supporting written materials prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The Project Owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

The Project Owner shall keep the signed training acknowledgement forms on file for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for six months, following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)

BIO-T-5 The Project Owner shall submit two copies of the proposed BRMIMP to the CPM (for review and approval) and to the City of Morro Bay, CDFG and USFWS (for review and comment) and shall implement the measures identified in the approved BRMIMP.

The final BRMIMP shall identify: (typical measures are)

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the Project Owner;
2. All biological resources Conditions of Certification identified in the Commission's Final Decision;
3. All biological resource mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
4. All biological resources mitigation, monitoring and compliance measures required in other state agency terms and conditions, such as those provided in the CDFG Incidental Take Permit and Streambed Alteration Agreement and Regional Water Quality Control Board permits;
5. All biological resources mitigation, monitoring and compliance measures required in local agency permits, such as site grading and landscaping requirements;
6. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;
7. All required mitigation measures for each sensitive biological resource;
8. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;
9. A detailed description of measures that will be taken to avoid or mitigate temporary disturbances from construction activities;
10. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
11. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities - one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Include planned timing of aerial photography and a description of why times were chosen;
12. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
13. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
14. All performance standards and remedial measures to be implemented if performance standards are not met;

15. A discussion of biological resources related facility closure measures;
16. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
17. A copy of all biological resources permits obtained.

Verification: The Project Owner shall provide the specified document at least 60 days prior to start of any site (or related facilities) mobilization.

1. The CPM, in consultation with the CDFG, the USFWS and any other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt.

2. The Project Owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval.

3. Any changes to the approved BRMIMP must also be approved by the CPM in consultation with the City of Morro Bay, CDFG, the USFWS, and appropriate agencies to ensure no conflicts exist.

Within thirty (30) days after completion of Project construction, the Project Owner shall provide to the CPM, for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the Project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

Closure Plan Measures

BIO-T-6 The Project Owner will incorporate into the permanent or unexpected permanent closure plan, and the BRMIMP, measures that address the local biological resources.

Protocol: The planned permanent or unexpected permanent closure plan will address the following biological resources related mitigation measures:

1. Removal of Project Owner's transmission conductors when they are no longer used and useful;
2. Removal of all power plant site facilities and related facilities;
3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and

4. Revegetation of the plant site and other disturbed areas utilizing appropriate seed mixture.

Verification: At least twelve months prior to commencement of closure activities, the Project Owner shall address all biological resources related issues associated with facility closure, which is incorporated into the BRMIMP, in a Biological Resources Element. The Biological Resources Element will be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

Incidental Take Permit

BIO-T-7 If the project will result in "take" of rare, threatened, or endangered species as defined and interpreted under California Endangered Species Act (CESA), the Project Owner shall acquire, as appropriate (i) a Consistency Determination under Section 20801 of the California Fish and Game Code, (ii) an Incidental Take Permit for such species under Section 2081(b) of the California Fish and Game Code, or both. The Project Owner shall incorporate the terms and conditions into the project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities requiring a Consistency Determination or Incidental Take Permit under the California Endangered Species Act, the Project Owner shall submit to the CPM a copy of the final CDFG Consistency Determination and/or Incidental Take Permit (if necessary).

Streambed Alteration Agreement

BIO-T-8 The Project Owner shall acquire any required Streambed Alteration Agreement from the CDFG (per Section 1600 of the Fish and Game Code), and incorporate the biological resource related terms and conditions into the Project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities requiring such authorization, the Project Owner shall submit to the CPM a copy of the final CDFG Streambed Alteration Agreement.

Regional Water Quality Control Board Certification

BIO-T-9 The Project Owner will acquire any required Regional Water Quality Control Board Section 401 state Clean Water Act certification, and incorporate the biological resource related terms and conditions into the project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities requiring such authorization, the Project Owner will provide the CPM with a copy of the final Regional Water Quality Control Board's certification.

Federal Biological Opinion

BIO-T-10 The Project Owner shall provide final copies of the Biological Opinion per Section 7 of the federal Endangered Species Act obtained from the U. S. Fish and Wildlife Service. The terms and conditions contained in the Biological Opinion shall be incorporated into the project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities, the Project Owner shall submit to the CPM a copy of the U. S. Fish and Wildlife Service's Biological Opinion.

U. S. Army Corps of Engineers Section 404 Permit

BIO-T-11 The Project Owner shall acquire any required permit from the U.S. Army Corps of Engineers Section 404 of the federal Clean Water Act permit. The biological resources related terms and conditions contained in the permit shall be incorporated into the Project's BRMIMP.

Verification: At least 30 days prior to the start of any site or related facilities mobilization activities requiring such authorization, the Project Owner shall submit to the CPM a copy of the U.S. Army Corps of Engineers permit.

Preventative Design Mitigation Features

BIO-T-12 The Project Owner shall modify the Project design to incorporate all feasible measures that avoid or minimize impacts to the local biological resources.

Protocol: The Project Owner shall ensure that:

1. transmission line poles, access roads, pulling sites, and storage and parking areas are designed to avoid identified sensitive resources;
2. the water intake pipes that use natural waterways are screened in a manner to avoid entrainment;
3. wetland loss is avoided; and
4. transmission lines and all electrical components are designed and constructed to reduce the likelihood of electrocutions of large birds.

Verification: All mitigation measures and their implementation methods will be included in the BRMIMP.

Construction Mitigation Management to Avoid Harassment or Harm

BIO-T-13 The Project Owner shall manage their construction site, and related facilities, in a manner to avoid or minimizes impacts to the local biological resources.

The Project Owner shall ensure that:

1. All avoidance and minimization measures will be in place, inspected, and approved by the Designated Biologist before site mobilization activities that may impact the sensitive areas and wildlife;

2. Pre-construction surveys for Project facilities (the main site, satellite parking, and construction staging areas) will be clearly defined and agreed upon in advance with input from USFWS and CDFG. All surveys will be conducted prior to any site mobilization;

3. Pre-construction surveys for the endangered Morro shoulderband snail in compliance with all measures established in the USFWS Biological Opinion will be completed prior to any site mobilization;

4. Pre-construction surveys for California red-legged frog on the MBPP Site, at Camp San Luis Obispo, and at the Satellite Parking area (as required by the USFWS) will be completed prior to any site mobilization;

5. Pre-construction surveys for burrowing owl on the Project site and at off-site storage and parking areas will be completed prior to any site mobilization, followed by avoidance or passive relocation, if owls are observed;

6. Pre-construction surveys for raptor nests and all sensitive and special status species animals (including bats) and plants on the project site and at off-site storage and parking areas will be completed prior to any site mobilization;

7. This item has been deleted.

8. A sound wall proposed by the applicant will be constructed to reduce noise impacts to riparian areas and other ESHAs during operation of the MBPP;

9. Pruning, tree removal, or ground disturbance in ESHAs is prohibited without biological surveys and consent of the Designated Biologist in consultation with the City of Morro Bay, USFWS and CDFG as needed;

10. Construction area boundaries are clearly marked with stakes, flagging, silt fencing, and/or rope or cord to minimize inadvertent

degradation or loss of adjacent habitat during facility construction/modernization;

11. All equipment storage will be restricted to designated construction zones or areas that are currently not habitat for special status species;

12. A speed limit of 20 miles/hour at all project locations including the construction access road will be enforced;

13. Wildlife-safe rodenticides and high specificity herbicides will be used on-site and along linear facilities as feasible. Use all pesticides in accordance with USDA label requirements;

14. Dust control measures will be implemented during construction and operation;

15. Shielded and down-facing lighting will be used at all appropriate locations to protect sensitive biological resources from exposure to bright night lighting;

16. All food-related trash will be disposed of in closed containers and removed at least once a week, and that feeding of wildlife shall be prohibited;

17. Hazardous debris and waste will be cleaned up on-site and along linear facilities;
18. An erosion prevention and control plan (see Soil and Water Resources Section) will be implemented on-site and along linear facilities;

19. Traffic access will be restricted to existing roads, designated access roads, construction storage and staging areas, and parking areas;

20. Construction activities which create high noise levels (i.e. >70 dbA) will be restricted to 7 a.m. to 7 p.m. on weekdays, and 9 a.m. to 5 p.m. on weekends, to minimize impacts to wildlife;

21. Construction will be limited to daytime at all drainages and drains to avoid impacts to special status reptiles, amphibians, and mammals;

22. Construction activities near ESHAs will be conducted with an appropriate buffer area and/or outside the sensitive courtship and breeding season of songbirds, amphibians, and other sensitive wildlife;

23. Temporary fencing and wildlife escape ramps will be provided for construction areas that contain steep walled holes or trenches if outside of an approved, permanent exclusionary fence. If a temporary fence is used, it will be hardware cloth or similar materials that are approved by USFWS and CDFG;

24. Open trenches will be inspected for wildlife each morning prior to start of daily construction activities. Any wildlife observed will be allowed to escape on its own if possible prior to commencement of construction. Otherwise, the Designated Biologist will contact the appropriate agency for assistance;

25. All construction pipes, culverts, or similar structures will be inspected prior to pipe burial. Pipes to be left in trenches overnight will be capped;

26. Non-security related firearms or weapons will be prohibited from the site;

27. All pets will be prohibited from being brought to the site;

28. All inadvertent deaths of sensitive species will be reported to the appropriate project representative. Injured animals will be reported to CDFG, and the Project Owner will follow instructions that are provided by CDFG;

29. Project Owner will revegetate and maintain all linears, construction, staging, temporary parking, and equipment storage areas with appropriate native plant species; and

30. Project Owner will provide a post-construction compliance report, within forty-five (45) calendar days of completion of the project, to the Energy Commission CPM.

Verification: All mitigation measures and their implementation methods will be included in the BRMIMP.

Habitat Compensation

BIO-T-14 To compensate for impacts to sensitive habitats that lie west and northwest of the Project site, and for impacts to riparian habitats in the ESHA on the north and northeast side of the Project site, and for impacts to upland habitats at Camp San Luis Obispo, the Project Owner will implement the following terrestrial compensation:

1. All Compensation Funds (Funds) shall be provided to the Morro Bay National Estuary Program to be used or directed in a "Morro Bay Power Plant Mitigation and Conservation Plan" (MBMCP). The MBMCP will be created under the auspices of the Energy Commission to guide the spending of the compensation funds so that the greatest benefit to wildlife results while maintaining a nexus between impacts and mitigation. The intent of the MBMCP is to implement an aggressive conservation program that includes acquiring fee interests, conservation easements, or management agreements on lands.

2. The MBMCP will be implemented by the MBNEP with oversight from the Energy Commission.

3. The Plan shall be approved by Energy Commission in consultation with an Advisory Committee with participation from USFWS, CDFG, CCC, MBNEP, City of Morro Bay, the Project Owner, and other stakeholders as appropriate. The Advisory Committee shall not exceed 12 representatives so that progress is not impeded.

4. The MBNEP is authorized to spend up to $43,947 of the Funds for management and administrative costs incurred by the MBNEP while administering the MBMCP.

5. The MBNEP may use Funds for approved projects in cooperation and coordination with other conservation organizations and may use the Funds to secure matching grants for the benefit of the Morro Bay watershed. This objective is included to clarify that the leveraging of Funds is permitted to obtain additional benefits for the Morro Bay watershed.

6. The Energy Commission and MBNEP shall enter into a Memorandum of Understanding (MOU) as to the authority to spend the Compensation Funds. No Funds will be spent prior to completion of the MOU, unless an exceptional opportunity has arisen, in which case, the Energy Commission CPM may authorize expenditure of Funds.

7. $1,000 has been required for each Compensation Acre for use in a long-term management and maintenance endowment. The MBNEP shall maintain this endowment for the Compensation Acres. The principle will remain invested in a CPM and MBNEP approved investment in perpetuity.

8. The Conservation Funds shall be spent on projects focused on the following habitats and species and for the amounts indicated below.

a. The amount of $162,120 is required to compensate for loss of approximately 3.33 acres of dune habitat. These Funds will be used to acquire and/or restore coastal dune scrub habitats with Morro shoulderband snail present, or a strong potential to be present.

b. The amount of $14,850 will be applied to compensate for the loss of approximately 1.35 acres of riparian habitat. Riparian habitats supporting California red-legged frog should be acquired and/or restored.

c. The amount of $62,500 is required to compensate for the temporary loss of approximately 25 acres of upland habitat. Upland habitats supporting (or demonstrating the potential to support) Morro shoulderband snails and California red-legged frog should be acquired and/or restored.

d. The total amount of the Funds will total $259,470, not including payments for snowy plover fencing.

Some funding or acreage levels may change pending receipt of needed information and completion of environmental analysis.

Verification: Not less than 90 days before the beginning of power plant construction (not to include tank demolition) the Project Owner will provide to the CPM, a copy of the check and verification that the check was provided to the MBNEP in the amount of $259,470 payable to the MBNEP. The Advisory Committee must complete a MBMCP and have it approved by the CPM within one year of certification of the proposed project.

Mitigation for Impacts to Snowy Plover

BIO-T-15 The Project Owner will contribute funds of no more than $10,000/yr (adjusted for annual inflation rates) for annual installation of protective fencing for nesting snowy plover and monitoring of plover populations. The placement and timing of the fencing, and the specific annual monetary contribution from Duke Energy to DPR in support of the fencing program, shall be determined in consultation with the City of Morro Bay, USFWS and DPR. Snowy plover monitoring will occur at either the city-owned lands known as the 'sand spit' or at the site in the vicinity of Atascadero Road, as determined by the USFWS. During pre-construction and construction of the project, the Project Owner or its authorized agent shall submit to the CPM a monthly status report of all fencing and monitoring activities. Upon commencement of commercial operation, the Project Owner or its authorized agent shall submit to the CPM in the Annual Compliance Report information on all fencing and monitoring activities. This fencing and monitoring program (and its associated Duke Energy monetary

contribution to DPR) may be terminated by the Project Owner, in concurrence with USFWS and CEC, after ten years, if it is not effective in encouraging plovers to nest at the pre-selected location (either the Atascadero Road vicinity or the sand spit) during this 10-year period.

Verification: Prior to the start of site mobilization in preparation for the installation of the permanent bridge over Morro Creek, the Project Owner will provide a copy of the checks to the CPM. The Project Owner will also provide a letter from the land management organizations and agencies involved stating the amount of funds received.

BIO-T-16 This Condition has been deleted.

Mitigation for Impacts to Morro shoulderband Snail and Snowy Plover

Along the Construction Access Road

BIO-T-17 The Project Owner shall provide protective measures to mitigate for potential impacts to the Morro shoulderband snail, snowy plover, as well as dune scrub habitats, along the construction access road. All of the measures and plans shall be developed in consultation with the City of Morro Bay, USFWS, CDFG and DPR.

1. Prior to any site mobilization in preparation for installation of the permanent bridge over Morro Creek, the Project Owner shall install pre-approved protective and permanent fencing/railing, an informational kiosk, and educational signs (materials) along Hwy 41 north of Morro Creek;

2. A detailed Management Plan shall be required for the roadway, north and south of the bridge as well as management of the fencing, kiosk(s), and educational displays;

3. The road management plan will be developed, approved, and implemented to protect natural resources along the road for the life of the project; and

4. After construction of the Project is complete, only emergency vehicles will be authorized to use the bridge crossing Morro Creek during the life of the Project.

Verification: Not less than 90 days prior to the start of site mobilization for installation of the Morro Creek bridge, the Project Owner shall provide to the CPM an agency approved design for installation of the fence, the kiosk, and all signs and educational materials. The Management Plan shall also be due at that

time. All designs and plans must be approved by the CPM in consultation with the City of Morro Bay, USFWS and CDFG prior to installation of any structures.

Not less than 30 days prior to the start of site mobilization for installation of the Morro Creek Bridge, the Project Owner shall provide to the CPM photographic evidence that the fencing has been successfully installed and that the kiosk(s) and educational materials are available.

BIO-T-18 The Project Owner shall submit construction plans for Embarcadero Road, bike paths and pedestrian paths, if any, that avoid impacts to coastal dune scrub habitat to the maximum extent feasible.

Verification: Six months prior to the installation of the permanent bridge over Morro Creek, the Project Owner shall submit construction plans to the CPM for review and approval. The plans shall also be submitted to the City of Morro Bay and the Executive Director of the Coastal Commission for review and comment.

BIO-T-19 The project owner shall prepare a geotechnical report for horizontal directional drilling (HDD) activities under Willow Camp Creek. The report shall investigate subsurface geological conditions and address the possibility of encountering sandy or rocky soils. The applicant shall implement all measures, including monitoring of drilling pressures and returns, identified in the geotechnical report to minimize the risk of "frac-outs" and drill mud release. No toxic compounds, such as diesel pills or chrome-based lignosulfonates, shall be added to drill mud. All drill muds and cuttings shall be disposed of at an approved off-site location. The Applicant shall also maintain adequate spill response equipment on-site in the event that drilling fluids are discharged into the creek.

Verification: At least 30 days prior to any site mobilization in preparation for horizontal directional drilling activities under Willow Camp Creek the Project Owner shall submit the geotechnical report, including a HDD monitoring and spill response contingency plan, to the CPM, the California Department of Fish and Game, and the Executive Director of the Coastal Commission for review and comment.

Note: The following Conditions apply also to tank farm demolition activities; **BIO-T-1** through **BIO-T-5**, **BIO-T-7**, **BIO-T-10**, **BIO-T-12, BIO-T-13, and BIO-T-17** (if the access road is used during demolition).

B. AQUATIC BIOLOGICAL RESOURCE

The subject area in this case which has generated by far the greatest expression of local concern, involves the potential of the Morro Bay Power Plant Project to have impacts on biological resources in the marine and estuarine environments.

To address these impacts, the Commission's examination of aquatic biological resources focuses upon impacts to state and federally listed species, species of special concern, Morro Bay Estuary wetlands, and other areas of critical biological interest in the Project vicinity. In this section we summarize the potential impacts to aquatic biological resources due to the Project and its related facilities, and address the ability of the Project to comply with applicable laws. The feasibility of various alternatives to the Project's proposed once-through ocean cooling system is examined in a separate section of this Decision, which follows.

In addition to formal testimony from the parties, the detailed evidence of record submitted in this case was developed in consultation and cooperation with the California Regional Water Quality Control Board-Central Coast Region (RWQCB or Regional Board), the California Department of Fish and Game (CDFG), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), California Coastal Commission (CCC), and the Technical Working Group (TWG)[60]

[60] The Technical Working Group was formed by the RWQCB in 1998 to oversee the design, implementation, and analysis of the thermal discharge and entrainment and impingement studies. Members of the TWG included RWQCB staff, Energy Commission staff, the Applicant, the Applicant's consultant Tenera, and independent marine biology consultants. The independent marine biology consultants include Dr. Peter Raimondi of the University of California, Santa Cruz and Dr. Greg Cailliet of Moss Landing Marine Laboratory both of whom were hired by the CCRWQCB, and Dr. Michael Foster of the Moss Landing Marine Laboratory who was hired by the Energy Commission. Additional participants were representatives of the California Department of Fish and Game (CDFG), California Coastal Commission (CCC), and the National Marine Fisheries Service. Intervenors and other interested stakeholders were able to observe and make comments at working group meetings. Observers of the TWG included representatives from the Morro Bay National Estuary Program (MBNEP), the Coastal Alliance on

SUMMARY OF THE EVIDENCE

1. Setting

The Project setting includes Morro Bay and its State and Nationally designated estuary, Estero Bay which receives the outflow from the Morro Bay Estuary, and the immediate area surrounding the Project and its cooling water intake facility near the mouth of Morro Bay.

a. Morro Bay Estuary

The Morro Bay National Estuary Program's Comprehensive Conservation and Management Plan[61] (MBCCMP) states that the Morro Bay ecosystem supports one of the most important wetland systems on California's coast (Ex. 284.). The natural communities of Morro Bay and the associated estuary were designated as California's first State Estuary in 1994. The following year, Congress designated Morro Bay a "National Estuary", in order to acknowledge and protect the bay's natural diversity. Morro Bay is one of 28 estuaries in the United States to be classified as a National Estuary. It is also part of the Pacific Flyway, which provides critical habitat for migrating shorebirds and waterfowl. (Ex. 197, p. 2-4.)

Morro Bay and its estuary covers approximately 2,300 acres and is sheltered from the open ocean by a sand spit and man-made breakwater. When intertidal and wetland areas are included, the acreage increases to 2,600 acres. (Ex. 284.) The bay is characterized by tidal marshes, mudflats, open water, and rocky intertidal zones, which provide highly productive, diverse, and dynamic habitats. (Ex. 4, pp. 6.6A-17 to 21.) Morro Bay and its estuary supports a wide diversity of

---

Plant Expansion (CAPE), the Environmental Defense Center (EDC), the Sierra Club, and the City of Morro Bay.

[61] The MBCCMP (Ex. 284.) is the result of a three-year cooperative effort of local citizens to carry out the provisions of section 320 of the federal Clean Water Act by promoting effective management of the Morro Bay Estuary and to restore and maintain its water quality and natural resources.

biological communities and species. In addition, the ocean shore, dunes, and undeveloped upland areas, as well as wetlands in the region, support many sensitive and listed species including invertebrates, amphibians, reptiles, passerines, raptors, shore birds, waterfowl, and small to medium-sized mammals. (Ex. 4, pp. 6.6B-6, 6.6A-51 to 65; Ex. 284.) The estuary also provides resident and nursery habitats for a variety of fish, including steelhead trout (Ex. 4, pp. 6.6A-61 to 63.) In addition to saltwater and tidal influence, Morro Bay and its estuary receives freshwater from a 48,000-acre watershed drained by Los Osos, Chorro, and Warden Creeks. (Ex. 284.)

Morro Bay is a shallow, seasonally hypersaline barrier lagoon, with an average depth of 4 feet below mean tide level. The bay was formed behind a natural sand spit, which resulted from littoral transport north from the region near Point Buchon. Today, the sand spit separates the bay and the delta of Chorro and Los Osos Creeks from the comparatively open waters of Estero Bay on the north side of Morro Rock. Freshwater enters the bay from the seasonally flowing Chorro and Los Osos Creeks. (Ex. 4, p. 6.6A-18.) Material from tributary creeks has caused considerable shoaling of the delta and backbay areas over the last 120 years. (Ex. 266, p 15.)

Morro Bay also has been altered by human activities such as dredging of a navigation channel and jetty construction along its shores. (Ex. 4, p. 6.6A-18). In addition, the land that now connects Morro Rock to the mainland was constructed to close a historic natural entrance to the bay from the north. (Ex. 197, p. 2-5.) Shoaling has occurred in the Chorro and Los Osos creek drainage basins related to agriculture. There has also been a loss of freshwater input and water quality impairment, the estuarine impacts of which have not been quantified. (Ex. 266, p. 18.) The navigational and urban development and sediment deposition have decreased the surface area of the bay and decreased water depths in most of the bay. The total area lost has been about 500 acres, or about 20 percent of the original 1883 surface area. (*Id*, p. 20.)

Morro Bay/Estuary has been described as containing four distinct zones, based on their tidal influence:

Entrance channel and upper bay. This area is characterized by rapid tidal flow and active sediment movement. The MBPP cooling water intake is in this zone. The strong currents do not allow the accumulation of fine sediments to the degree observed in the rest of the bay. (Ex. 266, p. 17.)

Central bay. This area has been heavily impacted by navigational development, and by land use on its shorelines and within the tributary drainage of Chorro and Los Osos creeks. (*Id*.)

Southernmost reaches of the bay. This area has the longest flushing times and consists of mud flats, with limited open water and marsh areas. It accumulates fine sediments from Chorro and Los Osos creeks and suffers strong land use impacts. (*Id*.)

Deltas of the Chorro and Los Osos Creeks. This is mostly mudflats with marsh encroaching as the deltas trap sediment. The area is highly impacted by land use in the watershed of the two tributary creeks. (*Id*.)

The diverse aquatic habitats of Morro Bay support marine and terrestrial food webs and provide critical migration, feeding, and breeding habitats for marine mammals, birds, fish, and invertebrates. The ecological integrity of Morro Bay and its associated watershed have been strained by many significant manmade impacts. The Morro Bay CCMP identifies seven of these impacts as "priority problems." They are: sedimentation, bacteria, nutrients, loss of freshwater flow during the dry season, heavy metals and toxic pollutants, loss or degradation of habitat, and loss of steelhead. (Ex. 284, p. 1-5.) All of these have affected and continue to affect the quality of the Morro Bay/Estuary.

Dominant ecological communities in Morro Bay include intertidal mud flats, eelgrass beds, and coastal salt marsh. (Ex. 4, p. 6.6A-23 Figure 6.6A-6, 6.6A-35, Fig. 6.6A-8e). The bay also contains habitats consisting of sandy subtidal, rocky intertidal, and brackish marshes. (Ex. 284.) These habitats support a diversity of aquatic vegetation. The estuary also accommodates a commercial shellfish lease. (Ex. 197, p. 2-6.)

There are several sensitive habitats in Morro Bay including: saltwater marsh, freshwater marsh, eelgrass beds, rocky intertidal zones, and tidal mudflats (Ex. 4, p. 6.6A-21 to 64). Several of these habitats are considered Essential Fish Habitat (EFH) by the National Marine Fisheries Service. (Ex. 197.)

The AFC identified two special status fish species as inhabiting or potentially inhabiting the Morro Bay/Estuary. (Ex. 4, p. 6.6A-61-65.) These are the federally endangered tidewater goby *(Eucycloglobius newberryi)* and the steelhead trout *(Oncorhyrnchus mykiss).* The tidewater goby inhabits bays and lagoons to the north and south of Morro Bay. While there is suitable habitat for the tidewater goby within Morro Bay/Estuary, no individuals were identified during surveys for the 316(b) assessment. (Ex. 197, 2-6.) Likewise, California steelhead trout were not detected in Morro Bay during surveys, nor were they detected as being impinged or entrained at the existing power plant.[62](*Id*.) Morro Bay also supports a diversity of fish, invertebrates, and many other organisms (i.e. phytoplankton, zooplankton, jellyfish, crabs, mussels, clams, worms, etc.) which form the basis of the ecosystem food web.

b. Estero Bay

Estero Bay is a semi-protected coastal reach extending from Point Estero in the north to Point Buchon in the south. It is situated on a prominent extension of the continental shelf and is an important fishing ground. The bottom is primarily sand and silt, although there are also significant areas of subtidal and intertidal rock reefs. Currents offshore of Morro Rock act to enhance thermal plume dispersion from the existing MBPP. (Ex. 266, p. 25.) The open waters of Estero Bay are highly productive, especially during spring months when strong coastal winds induce upwelling and increase nutrient concentrations in surface waters. Rock habitat at Morro Rock and the harbor entrance breakwaters support diverse

[62] Numerous other sensitive species listed in AQUATIC BIOLOGICAL RESOURCES Table 1 also inhabit and rely periodically on the project area.

communities of algal and invertebrate species. Kelp beds on subtidal inshore reefs include giant kelp and bull kelp which support numerous species of bivalves, sponges, and crabs. Common fish species associated with shallow rock reefs and kelp beds include many types of rockfishes, surfperches, clingfish, and others. (*Id.* 27.)

c. Project Site and Vicinity

The proposed Project would continue to use seawater for its once-through cooling system, as has the existing MBPP for nearly 50 years. This would involve both the intake of cooling water from Morro Bay and the subsequent discharge of the warmed cooling water into Estero Bay. For cooling water, Applicant has proposed a permitted cap of an annual average of 370 million gallons per day (mgd) and the Project has a maximum daily pumping capacity of 475 mgd. Intake velocities at the bar rack will be reduced from 0.5 fps to 0.33 fps. (Ex. 266, p. 28.) Keeping the power plant's cooling water intakes free of obstructions requires regular dredging in the vicinity of the intake structure, which is located adjacent to the navigation channel near the entrance to Morro Bay. (Ex. 197, p. 2-6.)

AQUATIC BIOLOGICAL RESOURCES Table 1
Terrestrial and Marine/Estuarine Special Status Species
Likely to Occur within One Mile of MBPP

Occurs within one mile	Scientific Name	Common Name	Legal Status Federal/State Other
Fish			
D	*Oncorhynchus mykiss*	Central California coast steelhead trout	FT
D	*Eucyclogobius newberryi*	Tidewater goby	FE/CSC
Mammals			
D	*Enhydra lutris*	Southern sea otter	FT

Source: Exhibit 4, Table 6.6B-2.
D = documented to occur historically within 1 mile radius of MBPP site.
N = Not documented to occur historically within 1 mile radius of MBPP site.

2. Applicable Laws, Ordinances, Regulations and Standards (LORS)[63]

a. Federal

The Endangered Species Act of 1973 (16 USC, §1531 et seq., provides for protection of threatened and endangered plants and animals and their critical habitat.

Marine Mammal Protection Act (16 USC Chapter 31 §1361-1375) provides protection for marine mammals.

Clean Water Act of 1972 (33 USC §404 et seq.) requires issuance of permits to dredge or fill waterways. Effluent discharge must be permitted by the National Pollution Discharge Elimination System Program (NPDES). The Central Coast RWQCB is authorized to issue the NPDES permit in this case. Under Section 316(b) of the Clean Water Act (CWA), the Applicant must utilize best technology available (BTA) to minimize any adverse impacts to biological resources due to the use of a once-through cooling water system. The 316(b) study results assist in the determination of BTA for the proposed project. In addition, thermal discharge is subject to the requirements of the California Thermal Plan as an "existing" discharge.

In 1987, Section 320, was added to the Clean Water Act to establish the National Estuary Program (NEP). The goal of the NEP is to identify, restore, and protect nationally significant estuaries of the United States. Morro Bay is one of 28 designated estuaries nationwide under this program. Section 303(d) allows for the designation of impaired water bodies and results in Total

[63] See Appendix A of this Decision for a complete lists of applicable laws, ordinances, regulations, and standards.

Maximum Daily Load (TMDL) requirements for the estuary and watershed. Morro Bay has been placed on the impaired water body list due to declining quality and health of the system and is afforded extra protection due to this designation.

Magnuson-Stevens Fishery Management and Conservation Act, as amended (16 U.S.C. 1801 et seq.) The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act set forth a number of new mandates for the NMFS, regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat.

b. State

California Environmental Quality Act (CEQA), PRC §21000 et seq. Mandates protection of California's environment and natural resources to develop and maintain a high-quality environment now and in the future.

California Endangered Species Act of 1984 (Fish & Game Code, §2050 et seq.) protects California's endangered and threatened species.

California Coastal Act of 1976 (PRC §30000 et seq.) requires the protection of coastal waters from adverse impacts of wastewater discharges and entrainment.

Section 30230 of the Coastal Act states that marine resources shall be maintained, enhanced, and, where feasible, restored.

Section 30231 of Coastal Act requires actions that minimize adverse impacts to biological productivity of coastal waters, including: minimization of discharge and entrainment.

Section 30240 of Coastal mandates protection of environmentally sensitive habitats from the degradation of habitat value.

Warren Alquist Act Section 25527 mandates that certain areas, such as estuaries, state parks, wilderness, scenic or natural reserves, and areas for wildlife protection, are prohibited areas as sites for facilities, unless consistent with the primary uses of such areas, and where there will be no substantial adverse impacts.

California Porter-Cologne Water Quality Control Act 1972; California Water Code §13000-14957; Division 7, Water Quality. The administering agency for this law is the Central Coast RWQCB. The act establishes the framework for regulation of activities affecting water quality in the state, as well as policies for the water quality control program. Section 13142.5 (b), establishes a state policy that new or expanded powerplants proposing to use seawater for cooling: shall implement the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life.

The California Thermal Plan requires that "existing" thermal discharges ensure protection of beneficial uses. The beneficial uses of concern are included in Duke Energy's NPDES permit from the Regional Water Quality Control Board. The main beneficial use of concern is marine habitat.

Fully Protected Species (Fish and Game Code Sections 3511, 4700, 5050, and 5515) prohibit the taking of birds, mammals, reptiles and amphibians, and fish, respectively, listed as fully protected in California.

3. Project Impacts

Power plant once-through cooling water systems impact aquatic organisms by thermal discharge effects, impingement, and entrainment. Thermal discharge is heated water from the cooling water system that is discharged into Estero Bay. This heated discharge water can cause impacts to biological resources. Impingement of aquatic organisms results during cooling water intake as organisms are pulled into contact with the intake screens, and are held there by the velocity of the water being pumped through the cooling system. Unless the organisms are able to escape, they perish. Entrainment occurs when small aquatic organisms (fish and clam larvae, etc.) are carried through the intake screens (screen mesh size is usually 5/16 or 3/8 of an inch) and through the remainder of the cooling system. (Ex. 197, pp. 2-10 to 2-11.)

The plant's impact upon aquatic biological resources is governed by two primary statutory schemes: the California Environmental Quality Act (CEQA) and Sections 316(a) and 316(b) of the Federal Clean Water Act.[64] The significance of impacts is measured very differently under these two schemes. CEQA measures impacts against a baseline of the current environment including the operation of the existing power plant.[65] The purpose of this approach is to inform

[64] There are, of course, other statutes applicable to this topic as set forth above and in Appendix A of this Decision.

[65] CEQA Guidelines section 15125 provides: "An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. This environmental setting

the decision-maker of the environmental consequences of the change to the *status quo* represented by the proposed Project. Sections 316(a) and 316(b) of the Clean Water Act are Federal laws enforced by the Regional Board. These statutes measure impacts absolutely (i.e., against the baseline of zero impact). Section 316(a) requires the protection of a balanced indigenous community of organisms in the receiving waters of the cooling system discharge. The primary concern is therefore the heated cooling water or thermal discharge from the Project. Section 316(b) requires the use of the "Best Technology Available" to minimize any adverse environmental impacts resulting from operation of the cooling water intake system. The intake system is the source of impingement and entrainment impacts.

a. CEQA

In order to evaluate the impacts of the Project under CEQA, the Commission must identify an appropriate baseline for cooling water use against which to measure future likely impacts from the Project. The Committee assigned to review Duke's application initially directed that parties address an environmental baseline consisting of the five-year period of cooling water use for the existing power plant during the years 1997-2001. That results in an average of 437 million gallons per day (mgd). (8/16/02 RT 168.) In response to subsequent motions and responses from the parties, and to ensure an even more conservative analysis under CEQA, the Committee directed the parties to use as a baseline the historical water use of the existing MBPP from the five-year period 1996-2000. (Committee Order dated 8/30/02.) The average water use for this period is 387.2 mgd. (Ex. 197, table 8, p. 2-25.) The subject of the appropriate CEQA baseline in this case is discussed in more detail in the section of this Decision entitled *Soil and Water Resources*.

---

will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."

Applicant presented evidence that the Project will reduce the impacts to aquatic biological resources in the estuary compared to the existing plant. With regard to impingement, Duke and the Regional Board staff (in conjunction with the Technical Working Group) concluded that these impacts were not significant, whether compared to the existing plant or in the absolute sense. (6/6/02 RT 10-12.) The witnesses testified that relative to the existing plant, Project impingement impacts will be reduced because design approach velocities of intake will be slowed from .5 ft/sec to .3 ft./sec. (Ex. 266, p. 43.)

With regard to thermal impacts, the Regional Board staff, Duke and the Technical Working Group concluded that these impacts would not be significant in the absolute sense. (6/6/02 RT 10-12.) Duke's witnesses testified that in comparison to the existing plant, the maximum thermal heat load in the discharge waters would be reduced 35%, from 85.2 million Btu/min to 55 million Btu/min. (Ex. 188.) In comparison with historic existing plant operations, the modernized plant will not increase its temperature differential. (*Id*.) Due to the reduced cooling water throughput, absolute temperatures and reduced heat loads in the discharge, Duke argues that thermal impacts will be reduced. (Ex. 177, p. 12.) The witnesses from the Regional Board testified that the Project is not expected to increase historic thermal discharge effects. (6/6/02 RT 257-258.)

Applicant also presented evidence that the Project will reduce entrainment impacts on both a short-term and long-term basis. On a short-term basis, the existing plant's maximum cooling capacity of 668 mgd is 41% greater than the proposed Project's maximum capacity of 475 mgd. On a long-term basis, Duke has proposed an annual daily average permit limit of 370 mgd, which is below the 387 mgd baseline 5-year average determined by the Commission.[66] Duke's position is that the Project will not create any significant, adverse impacts

[66] The section of this Decision on Soil and Water Resources gives a detailed discussion of the CEQA baseline issue in this case and provides a table comparing the Project's 370 mgd annual daily average to various other historical baselines.

pursuant to CEQA from once-through cooling and that the Project will actually lower water use and related impacts substantially, compared to those of the existing plant.

Duke argues that the existing power plant has been operating at the MBPP site for approximately 50 years with cooling water withdrawals at levels far greater than those of the proposed Project. Applicant points out that, in spite of this historic use of estuary waters, diverse species remain in the estuary. Duke also points to the Comprehensive Conservation and Management Plan for the Morro Bay Estuary (Ex. 284.), prepared after years of study by the Morro Bay National Estuary Program and completed in July of 2000. The MBCCMP is a comprehensive review of the health of the Morro Bay National Estuary, the key problems affecting it and proposed solutions to those problems. Despite the fifty years of once-through cooling operations described above, the MBCCMP does not identify the Morro Bay Power Plant as a problem. (*Id*.)[67]

Commission Staff has generally joined the Regional Board and Applicant in considering the amount of cooling water use by the existing plant and by the Project as a reasonable measurement of historical and future impacts, respectively. (Ex. 197, pp. 2-26, 2-39 to 2-40.) However, while Staff did not oppose Duke's 370 mgd annual average cap, Staff advocated that CEQA impacts be measured at close to the Project's maximum daily pumping rate. The Staff position amounts to effectively assuming Project operation at that maximum rate at all times. (Ex. 197, Table 8, p. 2-25; 6/6/02 RT 271.) However, the Staff witness was not aware of any power plant that pumps cooling water at the maximum rate for months at a time. (6/6/02 RT 301.) Nevertheless, Staff voiced

---

[67] CAPE member Jack McCurdy commented that the CCMP did not identify the existing plant as a problem because at the time there were no scientific studies of plant impacts. Furthermore, in a letter to the Commission dated April 19, 2004, Interim Program Director Daniel Berman, of the Morro Bay National Estuary Program (MBNEP) wrote that the MBCCMP actually noted the need for further study of the impacts of cooling water withdrawal on estuary marine life. He states that in light of recent studies and new data, the MBNEP is considering an amendment to the MBCCMP to reflect the impact of cooling water withdrawal on the estuary.

its concern that a pumping limit of 370 mgd as a long-term annual daily average would not prevent the Project from operating at rates above that average for months at a time. (6/6/02 RT 271.) Since such high operating rates could coincide with high rates of spawning and other life-cycle events for marine creatures in the estuary, Staff argues that the 370 mgd annual average cap is not sufficient to avoid significant CEQA-type impacts to aquatic biological resources in the Morro Bay Estuary.

CAPE presented a panel of scientists who generally rebutted Applicant's position and tended to agree with that of Staff. (Exs. 274, 275, 276, 277, 278, 279.) Concerning CEQA impacts, one CAPE witness testified that he did not disagree with Duke's claim that there exists no evidence of adverse impact due to 50 years of power plant operation. However, he stated that is because there have been no measurements made over that half century against which to compare current impacts. (6/6/02 RT 366.)

Pursuant to CEQA, Staff also addressed the Project's potential to cause indirect and cumulative impacts. The Staff witness testified that both entrainment impacts (which constitute a direct significant impact) and impingement effects (which are not directly significant) cause indirect effects that are significant when placed in the context of their contribution to degradation of the ecosystems' structure and productivity. Staff believes it is appropriate to treat the indirect impacts of entrainment and impingement as potentially significant because, in the view of Staff, they contribute to a cumulative biological problem by destroying many larval and small fish, invertebrates, and other organisms that are prey species for other species in Morro Bay. Staff witnesses testified that this degradation is a significant cumulative impact, and that the proposed Project's indirect impacts contribute to that degradation. (Ex. 197, 2-28 to 2-29.)

Applicant countered that the Project will have no indirect or cumulative impacts under CEQA, pointing out the Project's reduction of impacts from the existing

levels. These reductions are the result of changes to the existing plant which involve lowering cooling water pump capacities, enabling the adjustment of pumping relative to plant loads, lowering intake velocities, and significantly lowering permitted cooling water withdrawals and discharges. (6/6/02 RT 73-74.) Duke believes that Staff claims a significant "cumulative" impact by combining the impacts of the Project with either other Project impacts or other impacts to the estuary, such as on-going sedimentation. Applicant argues that these are not separate projects within the meaning of CEQA. (Ex. 197, p. 2-28 through 2-29, 6/6 RT 282:22 through 288:12.) Duke charges Staff with incorrectly saddling its Project with significant impacts through an analysis that is inconsistent with the legal requirements of CEQA.

CAPE argues that Applicant has failed to analyze numerous indirect impacts of the Project on the Morro Bay Estuary. (Opening Brief, Group IV, pp. 3-4; Ex. 27, p. 2.) CAPE's Dr. Henderson testified that species in the estuary will be indirectly effected, with longer-lived slower growing species tending to be more heavily impacted, thus changing the diversity and balance of the estuary's ecology. (Ex. 276, p.3-4.) CAPE also argues that impacts of the Project must be added to the various existing stressors within the Morro Bay Estuary's to determine the cumulative impact of the Project.

b. Evidence of Thermal, Impingement, and Entrainment Effects.

To assess the impacts by the Clean Water Act standards, the Regional Board convened a Technical Working Group (TWG) that included various agency staff as well as independent scientists hired by the Regional Board, the Commission and by Duke. The TWG directed the studies of thermal discharge, impingement and entrainment impacts conducted by Applicant's independent consultants. The TWG also reviewed the study results with the help of a Scripps oceanographer

and a resource population expert from UC Santa Cruz to advise the Regional Board and other agencies regarding impacts.

Based on these studies and the Technical Working Group review, Applicant and the Regional Board staff agree that neither the thermal discharge nor the impingement impacts are significant either against the "zero-baseline" standards of the Clean Water Act, or compared to the existing plant operations. Duke and the agency staff also agree that the entrainment impacts are sufficient to trigger the "Best Technology Available" (BTA) requirement of Section 316(b) of the Clean Water Act. These conclusions are shared by Dr. Raimondi, the independent scientist testifying on behalf of both the Energy Commission staff and the Regional Board. However, members of the Commission staff have identified the impingement effects as contributing to a significant cumulative effect under CEQA. (Ex. 197, p. 2-28; 6/6/02 RT 283-287.)

Another significant agreement among Duke, the Regional Board staff, Dr. Raimondi and Staff is that entrainment principally impacts larvae and that there is no scientific basis for drawing any conclusions regarding these impacts on adult populations. However, there was disagreement among the TWG experts as to the degree of entrainment risk and extent of entrainment impacts on these populations of larvae.

1) Thermal Discharge

Based upon the studies directed by the Technical Working Group, the Regional Board staff and the Duke Energy experts agree that thermal impacts from modernization of the Morro Bay Power Plant will not be significant pursuant to the Clean Water Act[68]. As the Regional Board staff commented:

[68] The Thermal Discharge Assessment Report (Ex. 160.) describes the numerous long-term temperature recording stations and periodic temperature surveys conducted from small vessels and overhead aircraft.

> "Thermal impacts occur along approximately 600 feet of rocky intertidal habitat on north Morro Rock. Other habitats do not appear to be affected, except in the immediate area of the discharge. The Board asked staff to consider the possibility of moving the discharge structure partway offshore, to the northwest end of Morro Rock. This option may reduce impacts on north Morro Rock, but would likely increase the thermal impacts along the west side of Morro Rock, and therefore would likely have no net benefit[69]. (Ex. 267, p. 3.)

Applicant testified that compared to the existing MBPP, the Project will, under weighted maximum load conditions, decrease heat load by about 53 percent and reduce discharge water volume by 45 percent. (Ex. 266, p. 71.) The Regional Board witness stated that during operation there would not be a difference between the thermal discharge of the existing plant and the Project. (6/6/02 RT 256.) Applicant argues that therefore, under CEQA, there would necessarily be no significant impacts. The witness for the Regional Board agreed that the thermal impacts from the Project are "not unreasonable", and that the Regional Board does not foresee a thermal increase for the Project. This complies with the Clean Water Act as well. (6/6/02 RT 256-258.)

Energy Commission staff, however, found that while not biologically significant to populations of special status species, the thermal impacts are "undesireable", though not significant under CEQA. (Ex. 197, p. 2-23; Opening Group IV Brief, p. 17.) CAPE takes a similar position to that of Staff regarding thermal effects. (CAPE Opening Brief Group IV, p. 8.)

2) Impingement

The 316(b) study also included an analysis of impingement impacts. With the exception of the Energy Commission staff, expert witnesses agreed that impingement impacts from the Project are not significant, under CEQA or against

[69] This is consistent with the findings contained in the Draft NPDES permit, dated March 21, 2003. (Ex 312.) That document states that the Project will not increase thermal impacts, that therefore no further mitigation is required, and that there exist no reasonable alternatives to reduce thermal impacts of the Project. (Ex. 312, pp. 7-8.)

the “zero baseline” of the Clean Water Act. The Regional Board staff considers impingement impacts to be of relatively minor importance. The amount of fish impinged is about 1.4 tons per year, and these are mostly northern anchovies (74% by number). About 850 pounds of invertebrates are also impinged annually. (Ex. 267, p. 3; 6/6/02 RT 253-254.) Regarding the design of the proposed Project, Applicant’s witness testified that the Project will result in a 40 percent reduction in approach velocity to the intake screens from 0.5 to 0.3 feet per second, which should reduce future impingement. (Ex. 266, p. 43.)

At the hearing, Regional Board witness Thomas confirmed that the Regional Board staff and its consultants had concluded impingement was of “relatively minor importance.” (6/6/02 RT 253-254.) Duke experts concurred in these results and noted additionally that the draft NPDES permit requires Duke Energy to minimize the amount of cooling water used by shutting down circulating pumps during periods of low power demand, which will also help minimize impingement rates. Applicant noted too that the draft NPDES permit requires Duke Energy to periodically dredge the area in front of the intake structures to minimize water intake structure approach velocity, further reducing impingement rates. (Ex. 266, p. 43.)

Energy Commission staff took the position that though impingement impacts are not themselves significant, when combined with the Project’s entrainment impacts they become part of a significant cumulative impact. (Ex.197, p. 2-28 to 2-29; 6/6/02 RT 285-287.) CAPE also follows this Staff approach. (CAPE Opening Brief Group IV, p. 8.)

3) Entrainment

All the expert witnesses in this proceeding agree that there is a sufficient impact on certain fish larvae due to entrainment to trigger the requirements of Section 316(b) of the Clean Water Act. Because it is infeasible to measure the entrainment effect on the larvae of every effected species, the TWG used the

entrainment data collected for the 316(b) study to establish estimates of proportional mortality (PM), for a combination of all species. PM is therefore a measure of the risk of entrainment for those species susceptible to entrainment. However, it is not a measure of entrainment impacts on either the adult or the overall population of the species susceptible to entrainment. It is also not a measure of entrainment impacts on all species in the estuary.

Applicant argues that the proposed Project will reduce the existing plant's impact substantially. Nonetheless, Duke's witnesses testified that approximately 9.1 percent of those fish larvae vulnerable to entrainment should be assumed lost. Staff and the Regional Board experts estimate the proportional mortality as ranging from 16.2 to 30.8 percent[70].

Duke's position is that whichever percent loss figure the Commission determines is correct, the figures represent larval loss only and do not represent the proportional loss of adult populations or commensurate loss to the overall productivity or health of the estuary. Duke based this argument on several factors: first that the assumptions regarding entrainment impacts apply only to those species that are vulnerable to entrainment, while many fish species are not. (6/6/02 RT 14-15.) Thus, there is a category of estuarine fish species that are not entrained at all. The proportional mortality assumptions apply only to those larval fish that are vulnerable. Second, even for species whose larvae are vulnerable, the expert witnesses agree that there is no substantial evidence or sound scientific basis for establishing what, if any, relationship exists between larval losses and the health of adult populations of those species. (Ex. 197, p. 2-11; 6/6/02 RT 18.)

Applicant argues that while no study exists proving a relationship between entrainment losses of larvae and effects on adult populations, the existing power

[70] These figures are revised to reflect the 370 MGD annual average limit on pumping.

plant has operated at higher pumping levels than that of the Project for the last 50 years without any documented impacts to adult populations in the estuary. The Regional Board witness acknowledged that if annual adult losses actually matched those of proportionate larvae mortality, adult populations would rapidly decline to zero. (6/6/02 RT 288-290, 320.) Staff believes that the lack of historical data makes it impossible to determine that past entrainment has not had a significant effect on estuarine species. (6/6/02 RT 270.)

Duke also presented evidence that due to the location of the intake near the mouth of Morro Bay, a very high percentage of the larvae entrained by the facility would have been swept out of the estuary by the tides even if the existing MBPP were not there. Applicant's witnesses stated that approximately 54 percent of the water and organisms which are entrained would have otherwise been naturally discharged out of Morro Bay and into the ocean by the outgoing tides.

> The persistence of these species in Morro Bay after more than 40 years of plant operation suggests that the linkage between entrainment losses and Morro Bay fish populations is negligible, and that it is unlikely that the MPBB intake flow has much effect on population size or trajectory through time. (Ex. 266, p. 65-66.)

Both witnesses for Duke and the Regional Board also noted that massive mortality of larvae in nature is normal even without the power plant. (6/6/02 RT 202, 291-292.) Additionally, Duke pointed out that some natural predation of larvae happens through "cropping." This occurs when predators eat larvae as they pass through the cooling system. (6/6/02 116-117.) One commenter spoke to having observed abundant predator fish gathered at the outfall of the existing plant. (6/5/02 353-354.) This was confirmed by the witness for the Regional Board who testified that all entrained species are consumed by other marine creatures after being discharged from the outfall. (6/6/02 RT 321-324.)

AQUATIC BIOLOGICAL RESOURCES - Figure 1
Locations of Morro Bay and Estero Bay Sampling Stations
Source: Exhibit 266, Fig. 3, following p. 44.

AQUATIC BIOLOGICAL RESOURCES Table 2
Relative Percentage of Fish Species Found at Five Different Source Water Sampling Locations (#1-5) at Morro Bay

Fish Species	1 Harbor Mouth	2 Intake	3 Mid Bay	4 Back Bay	5 Offshore
Unidentified Gobies	79%	75%	83%	76%	35%
Shadow Goby	5%	3%	11%	20%	1%
Northern Lampfish	-	3%	-	-	12%
Pacific Staghorn Sculpin	4%	4%	-	-	1%
Jacksmelt	1%	1%	-	-	1%
Unidentified Blennies	-	2%	-	-	1%
Northern Anchovy	-	-	-	-	9%
All other species	10%	11%	7%	4%	10%
Additional species found offshore	-	-	-	-	30%

Source: Exhibit 197, Table 4, p. 2-14.

i. Common Assumptions for Calculation of Proportionate Mortality

Witnesses for Duke, the Regional Board, and Staff agreed on several assumptions used in all the analyses. As discussed below, the three agreed upon assumptions are: 1) that there is no survival of entrained larvae, resulting in 100 percent mortality; 2) that the plant operates at approximately 90 percent of its lawful capacity all the time; and 3) that there is no compensatory response among populations of entrained species. Duke argues that these assumptions likely overstate impacts and provide a significant safety margin to account for data uncertainties and other factors.

Concerning the first assumption, Applicant's witness testified that in calculating the estimates of PM, Duke and the TWG have conservatively assumed that 100 percent of the organisms die, despite documentation via intensive through-plant entrainment survival studies at power plants across the U.S. that survival of larval fish and invertebrates can be very high[71]. The witness testified that mean survival rates for most taxonomic groups have exceeded 50 percent, the only major exceptions being the relatively fragile herrings and anchovies, which have mean survival rates around 25 percent. Survival rates of 88 percent and 98 percent were reported for naked goby (*Gobiosoma bosc*) in entrainment survival studies at the Calvert Cliffs power plant in southern Maryland. Gobies make up nearly 81 percent of the larval fish entrained at MBPP. (Ex. 266, p. 68.)

Staff, and the Regional Board disagree that the 100 percent mortality assumption represents a conservative assumption, arguing that Applicant's claim focuses only on survival of fish species while ignoring or downplaying other species. (6/6/02 RT 115.) The Regional Board witness stated that there exists no evidence of effective survival and that survival studies that retain discharged species in a lab do not duplicate natural settings. (*Id.* RT 33-34, 310; Ex. 272, p. 4.)

Duke argues that another "very conservative" assumption used by all witnesses is that the plant will withdraw the maximum amount of cooling water allowed by law all the times. The Regional Board Staff Report assumption of 17-33 percent proportional mortality assumes 427 mgd average daily cooling water use perpetually. (6/6/02 RT188-189; Ex. 267, p. 6.) This is approximately 90 percent of the 475 mgd maximum for the Project. Applicant argues that in fact, the plant will not operate at even this reduced limit all the time, citing testimony by its own

[71] Duke's testimony displays a figure showing the results of survival data from a review of entrainment studies encompassing the years 1970-2000 for various fish species/groups. (Ex. 266, Figure 11, following p. 68.)

witness that the plant will likely operate at 328 mgd average, even using conservatively high projections. (Ex. 186; Ex. 200A, p. 4; Ex. 266, p. 31.) Thus, Duke argues, the assumption of near-maximum power plant operation further overstates entrainment impacts.

Staff disputes that this assumption is a true conservatism since Staff recommends that any analysis of Project impacts should assume the maximum pumping rate of 475 mgd. Staff points out that the 427 mgd assumption is actually a 90 percent, rather than a 100 percent operating assumption. (Reply Brief, Group IV, p. 13.)

The third assumption is that no compensatory response occurs among species entrained by the power plant. Mechanisms of compensatory mortality act to increase the growth rates, survival and reproduction by those members of a population that survive. (Ex. 266, p.70.) Duke argues that the PM calculation, which assumes no compensatory response, is a particularly unlikely and therefore conservative assumption to make, especially in the circumstances of the Morro Bay Estuary. Duke notes that CAPE witness Dr. Henderson confirms in his testimony that compensation is a well-demonstrated principle, although Dr. Henderson also states that it should not be assumed to compensate for all losses or to apply in all circumstances. (Ex. 276.)

Applicant claims that there is considerable evidence that the major constraining factor on adult populations of entrained species is the amount of available habitat and that this fact is borne out in the National Estuary Program Comprehensive Conservation and Management Plan. (Ex. 284.) Thus, in habitat-constrained environments such as the Morro Bay Estuary, compensation for entrainment losses can occur in part due to decreased competition for available habitat. Regional Board witness Dr. Raimondi discussed compensation at some length. (6/6/02 RT 40-48.) Ultimately, Dr. Raimondi acknowledged a compensatory response is a legitimate concept but testified that the TWG elected not to factor

in the concept in order to be conservative, given insufficient information specific to this estuary. Dr. Raimondi stated that this approach is "absolutely a conservative estimate." (6/6/02 RT 54: 12-13.) Applicant concludes that while neither Duke nor the agencies adjusted their results to account for compensation, the failure to do so makes the final PM calculations "very conservative". Applicant argues that this assumption provides a safety margin against the uncertainty of the information that is available.

Staff counters that while compensation is a valid concept, there is no way to calculate it since the evidentiary record contains no accurate determination of carrying capacity for the estuary and no data to determine whether the estuary has a constant carrying capacity. (6/6/02 RT 40, 43.) The Regional Board witness stated that if there exists a compensatory buffer of larvae, it is a valuable resource which protects against natural or man-made perturbation. (Ex. 272, p. 5.)

Duke's expert witnesses accept each of the three assumptions described above. However, they find them to be conservative, and to offer a safety margin that Applicant claims is appropriate given data uncertainties and the importance of protecting the Morro Bay National Estuary. In Duke's view, when all three of the issues described above are considered in combination, the safety margin they represent is very large. (Opening Brief, Group IV, p. 29.) By contrast, Staff argues that, rather than creating a large safety margin, the agreed-upon assumptions are merely prudent and sound ecological science.

ii. Disputed Assumptions

However, Staff and the Regional Board made three additional assumptions in their PM calculations. Duke argues that the additional assumptions substantially overstate entrainment impacts. These are: 1) the use of weighted versus simple averages; 2) a separation of ocean and estuarine species; and 3) the assumption

of maximum versus mean exposure times for larvae at risk. The evidence on each is discussed below.

a. Weighted versus Simple Averages

Proportional mortality estimates were calculated individually for each of the proxy species that the Technical Working Group agreed should represent entrainment effects. These species-specific PM figures were then averaged to find an overall proportional mortality rate. At issue is whether this should be a simple average or an average weighted by the abundance of the different species. Duke argues that the contribution of very low-abundance larvae should not be given the same weight as that of very abundant species in assessing potential entrainment effects on the bay's fish community and ecosystem. Their witness described this issue as follows:

> And so in this case, some of the fish were collected in orders of magnitude of more abundance than others. And the weighted process just takes those means for which most of the information was derived and weights them and estimate the overall mean impact. And that's essentially what was done by Duke. It's essentially the means were weighted by abundance. So abundance means it counts more in the overall average. (6/6/02 93:17-94:1.)

Applicant's calculation, using a weighted average method, results in a proportional mortality for the proxy species of 9.1 percent. Duke argues that this is appropriate, since a combination of several species which amounted to only 7 percent of total larvae entrained, should be weighted less than say, unidentified gobies, which made up 77 percent of total entrainment. (Ex. 299, p. 50, Fig. 5.) In comparison, the simple average advocated by Staff, results in overall proportional mortality of 16.2 percent. Staff witnesses Dr. Raimondi explained the different positions as follows:

> In my opinion it's a matter of the question that you're asked. If the question is what is the larval loss for fish, if that's the extent of your question, you should use weighted averages. I have no disagreement with that. … [I]f, on the other hand, you're taking the approach as we were doing, that these things we were counting in the target organisms were proxies for all the organisms that we could not sample, those things like

> invertebrate larvae, other than crabs, algaspore, seagrass seeds, zooplankton, phytoplankton, anything else that could have been entrained, then our approach has been to use simple averages. So, it's really a matter of the question. (6/6/02 RT 236-237.)

Staff points out that one of the underlying assumptions of the 316(b) analysis was that the identified fish species would serve as a proxy for all other entrained species that could not be identified. (Ex. 197, p. 2-11.) In Staff's view, weighting averages to reflect relative abundance of only the identified fish species ignores all the other unidentified species that suffer losses due to entrainment. However, Duke counters that this concept is inconsistent with the idea of using the correct proportional mortality of the abundant species as a proxy for the PM all species.

b. Separation of Ocean and Estuarine Species

The second disputed issue is whether it is appropriate to separate proportional mortality calculations for ocean and estuarine species. Applicant's witness described the issue this way:

> Calculations for the ocean species assume that Morro Bay is connected to the ocean, and I think the animation that Dr. Mayer showed pretty clearly indicated that to be the case. And essentially these populations are assumed to be open.
>
> However, the calculations for the bay species assume that Morro Bay is more like a lake. In other words, it's closed, and its source water volume is much smaller, in relation to the other species of interest. And the PMs for these bay species are higher because of these assumptions. When you calculate a proportion of mortality (sic), the entrainment losses are estimated proportionate to some number in the source water. And if that source water is smaller, it's likely that the PM estimates will go up. …I would argue that all species are part of larger coastal populations. Bay species spawn in-shore and are delivered to the ocean in large numbers. … I would suggest that if we are making the argument that Morro Bay has value to a coastal ocean ecosystem, you can't assume that it's like a lake when you make the PM calculations. There's a logical disconnect for me there, and I think the reason why some of the bay species estimates are higher is because of this logical disconnect.

> So the solution, in my opinion, would be to calculate the PM the same way for all entrained species and use all species to estimate the overall average effects. (6/6/02 RT 94-96.)

On the other hand, Staff for the Commission and for the Regional Board believe the important question concerns the impacts of the Project on the Morro Bay Estuary. Therefore, Staff separated estuarine and coastal taxa in order to estimate losses from the estuary alone, rather than from both. Staff argues that Duke's approach ignores the fact that coastal and estuarine species spawn in different places and that entrainment impacts on the species in each place vary. (Ex. 267, p. 5.) Dr. Raimondi testified that, for example, it would be nonsense to argue that larval production from rockfish was lost to Morro Bay, because rockfish larvae are produced in the ocean, not in the estuary. (Ex. 272, p.3.) In Staff's view, by separately calculating PM for estuarine species, the Commission and the public will better understand what proportion of larvae produced in the estuary are actually destroyed by the Project. (*Id*.)

However, Dr. Raimondi also noted that this disagreement goes away when evaluated in terms of the amount of habitat needed to compensate for entrainment losses, since either position results in the equivalent effect of 380 acres of habitat and about two miles of coast equivalent. (6/6/02 RT 237-239.)

CAPE's witness, Dr. Stephens stressed that a major function of the estuary is exporting larvae to the coastal zone. (*Id.* RT 346.)

c. Maximum versus Mean Exposure Times

The most significant of the three disputed issues in the proportional mortality calculation concerns whether to use the mean or maximum exposure value. Exposure is a key variable that represents the number of days that larvae are vulnerable to entrainment. (6/6/02 RT 98-101.) The 316(b) study results included an identification of the average age of the fish larvae that were entrained, as well

as an identification of the maximum age of entrained larvae. (Ex. 66.) Applicant argues that vulnerability to entrainment is a function of two things: 1) the age of the larvae (because at some point they grow too large to be entrained); and 2) their likelihood of coming into contact with the intake system. (6/6/02 RT 98-101.) In other words, for a larva to be entrained it must be small enough to be vulnerable to entrainment and it must pass near enough to the intake to be drawn into the plant. (*Id*.)

The age distribution of larvae actually entrained by the existing plant is shown in Figure 2 which follows. (Exhibit 266, Fig. 9 p. 59.) This exhibit from Applicant's testimony shows that essentially the oldest fish larvae entrained was 20 days old. About one-tenth of one percent (0.1% or .001) of the larvae entrained were 20 days old. (6/6/02 RT 106.) This is the exposure time used by Staff to represent vulnerability to entrainment. Duke's witness called doing so "a relatively extreme safety margin". (6/6/02 RT 107:17.) He analogized the Staff approach to be like someone saying that the life expectancy of all human beings is equivalent to that of the oldest surviving one. (*Id*.)

AQUATIC BIOLOGY - Figure 2
Cumulative Age Distribution for Larval Gobies at Entrainment Stations (M2, M3 and M4)

Source: Ex. 266, Fig 9, following p. 58.

Figure 2: Cumulative age distribution for fishes sampled from January through December 2000 at a) entrainment station (2) (N = 1,043) and b) bay stations (3 & 4) (N = 2,223). Age calculated using a constant growth rate of 0.27 mm/day.

Duke argues that the vast majority of species are not vulnerable to entrainment for nearly as long as 20 days. That is because the tidal flushing patterns of Morro Bay create a very high probability that larvae are carried out to sea within that period of time. (Ex. 256.) Duke also notes the great difference between the fast tidal flushing speeds and the slow intake velocity at the Project intake. (6/6/02 RT 101-102.) Applicant urges that a fairer estimate of true susceptibility to entrainment would be to take the mean age of the species entrained, which is 4.25 days, and captures 77 percent of the entrained larvae based on the data. (Id. RT 106.) Duke is critical of the Staff approach as unrealistic due to its calculation of maximum exposure times and its reliance on a small sample size. (Ex. 269, p. 4.)

The Staff acknowledges that the risk of entrainment goes down as larvae age. (6/6/02 RT 240-242.) However, data is only available for one species – gobies. Since the best estimate for gobies is one that is similar to the estimate derived using the maximum age of entrainment, Staff and the Regional Board argue that the use of maximum values is the only reasonable approach to estimating entrainment risk. (*Id.* RT 243.)

4. Agency comments

a. Coastal Commission

The CCC made recommendations (Ex. 320.) regarding the Project in four areas, including marine biological resources.[72] The CCC recommendations found that since the Project is being reviewed by the Energy Commission and the Regional Board as an expansion of an existing coastal dependent industrial facility in a site appropriate for such facilities, the Project, regardless of design alternatives of dry cooling or once-through cooling, will be consistent with the site's coastal dependent zoning designation. (Ex. 320, §3.1.10.)

[72] Other areas in the CCC recommendations addressed visual resources, coastal dune habitat, and public access and recreation.

However, the CCC ~~found~~ stated that the Project, as proposed with once-through cooling and a Habitat Enhancement Program (HEP), does not conform to the marine resource policies of the Coastal Act and the ESHA policies of the LCP. The CCC finds that "based on available information," only the use of a dry cooling system would conform to those policies. (*Id*.)

The determinations of the CCC raise a number of legal questions. First, while the CCC recommendation states that its findings are based on available information, it is clear that the CCC has relied heavily upon the FSA sections on Aquatic Biological Resources prepared by Energy Commission staff. (Exs. 197, 198; see Ex. 320, §3.1.9.) On the other hand, the Energy Commission in adjudicating the issues regarding the Project's impact on marine biological resources, conducted a thorough and rigorous quasi-judicial proceeding, receiving evidence from all parties in the case. The evidence was heard and judged by the two members of the Commission assigned to conduct the AFC case. The Staff FSA constituted an important part of our evidentiary record, but only a part. Substantial evidence was presented by Duke Energy in the form of pre-filed testimony and the oral testimony of expert witnesses.

In our adjudication of the complete body of evidence we have found that many of the positions taken in the FSA are not supported by the weight of evidence and therefore, we have not adopted findings consistent with those

positions.[73] Key among these is the Staff position stated in the FSA that the Project with once-through cooling will have a significant effect on the aquatic environment of Morro Bay and its estuary. We have found that this position is not supported by the evidence and have determined that the Project will not have a significant impact upon the bay and estuary.

Pursuant to CEQA, the lack of a significant impact obviates the need for mitigation. Thus, while we discuss the various cooling alternatives in the next section of this Decision, none of them are appropriate as mitigation for the Project's once-through cooling impacts. Similarly, the HEP proposals are later discussed not as mitigation of a significant impact pursuant to CEQA, but rather as part of the "best technology available" evaluation pursuant to the Clean Water Act, section 316(b).

b. National Marine Fisheries Service

The National Marine Fisheries Service (NMFS) is obliged under the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §§1801, et. seq.) to provide recommendations to federal and state agencies that permit projects with the potential to adversely impact essential fish habitat. Morro Bay is considered essential fish habitat for a number of federally managed fish species included in the Pacific Groundfish and Coastal Pelagics Fishery Management Plans (FMPs). A NMFS representative pointed out that Morro Bay, a national and state designated estuary, is officially listed as an impaired water body under section 303(d) of the Clean Water Act due to factors such as sedimentation, metals, pathogens, bacteria, agricultural runoff, urban runoff, and periodic dredging. For this reason NMFS urges that all feasible measures should be taken to avoid impacts to the estuary. NMFS emphasizes avoidance over

[73] This is consistent with the requirement that any agency engaged in adjudication must base its decision on specific findings that are supported by substantial evidence in the record. (Pub. Resources Code, §§ 21080(e), 21082.2(c); CEQA Guidelines § 15384(a); *Topanga Association For a Scenic Community* v. *County of Los Angeles;* 113 Cal.Rptr. 836 (1974).

mitigation and supported the Staff FSA analysis and recommendation for the use of a closed cooling system, if found feasible. If not feasible, NMFS seeks to be involved in any mitigation steps. (6/6/02 RT 385-388.)

Public Comments

Richard Smith addressed the importance of estuaries to the coastal and marine environment and expressed his fear that impacts from the Project's once-through cooling system could lead to simplification the estuary's ecosystem, making it less robust. (6/6/02 RT388-393.) **Stephen Pryor** of San Luis Obispo questioned the accuracy of some of the surveys and analysis presented by witnesses at the hearing. He stated that surplus larvae in the ecosystem serve the purpose of providing a buffering capacity which he believes help guarantee adequate adult populations in the estuary. (*Id*. RT 397-400.) **Mandy Davis** believes that once-through cooling has a significant adverse impact on the estuary and should be avoided. (*Id*. RT 400-403.) **Nelson Sullivan** stated that while rowing in Morro Bay he has observed a great many jellyfish, which he believes are impinged in large numbers at the existing plant, but which were not reflected in the various impingement studies. (*Id*. RT 403-404.) **Pat Henshaw** identified herself as a local resident involved in efforts to reestablish and replant eelgrass in the estuary. She voiced opposition to the proposed once-through cooling system. (*Id*. RT 408-410.)

Walter French, a business agent with the Plumbers and Pipefitters Union of San Luis Obispo County argued that, since the Project will have lower cooling water demands than the existing plant, it will reduce aquatic mortality. He also termed as "common sense" the observation that the existing plant cannot be killing one-third of aquatic life, since such life continues to exist in the estuary. (*Id*. 393-395.) **James Wood**, who serves on the Morro Bay Harbor Advisory Board, favored a habitat enhancement approach over the dry cooling alternative. He also stressed the difficulty in securing money to dredge the harbor, though the dredging aids

waterfront commercial business and supports flushing of the bay. **John Barta,** who serves on the Morro Bay Planning Commission, stressed the large amount of community involvement in preparing the MBCCMP for Morro Bay as part of the National Estuary Program. He stated that as a result of a four-year long process, seven priority problems were identified, none of which include power plant entrainment. In addition, the plan identified 61 actions to benefit the estuary, with $45 million of the highest priority items still not funded. He argued that Duke's proposed habitat enhancement program could greatly help fund efforts to improve the estuary environment. (*Id.* 404-408.)

Commission Discussion

The environmental importance of the Morro Bay Estuary is undisputed. The Morro Bay ecosystem supports one of the most important wetland systems on California's coast. Morro Bay and the associated estuary were designated as California's first State Estuary in 1994. The following year, Congress designated Morro Bay a "National Estuary", in order to acknowledge and protect the bay's natural diversity. Its importance to the coastal environment and to the people of Central California and the City of Morro Bay cannot be overstated.

The record is also undisputed that the bay is suffering from a variety of problems. The Morro Bay National Estuary Program has identified in its MBCCMP seven problems that require priority attention.[74] (Ex. 284, p. 1-5.) The estuary has been identified as an impaired water body under section 303 of the Clean Water Act. For these reasons we are particularly attuned to the need to protect the Morro Bay Estuary from significant impacts.

[74] The CCMP priority problems are: sedimentation, bacteria, nutrients, loss of freshwater during dry season, heavy metals and toxic pollutants, loss or degradation of habitat, and loss of steelhead.

The proposed Project has the potential to impact aquatic biological resources in the estuary through its continued use of the once-through cooling water system currently in use at the existing MBPP. For fifty years the existing MBPP has withdrawn ocean water from an intake structure near the mouth of Morro Bay and discharged warm water into Estero Bay on the north side of Morro Rock. These existing conditions form the baseline against which impacts from the proposed Project must be compared, pursuant to CEQA.

1. CEQA

To evaluate the Project's impacts under CEQA we determined the appropriate baseline. By Order dated August 30, 2002, the Committee ruled that the appropriate base is the average cooling water use by the existing plant over the five-year period 1996-2000. The average use during those years was 387.2 mgd. (Ex. 197, Table 8, p. 2-25.) This provided a recent picture of the existing environmental setting without allowing water use during a single year to distort the baseline unrealistically.[75] We have rejected Staff's attempt to argue a baseline determined from a ten-year annual average. (Ex. 197, 2-25.) We find that a ten-year period does not accurately reflect the existing environment, as required by CEQA Guidelines. However, Staff later appeared to abandon this baseline, or any quantitative estimates, in favor of an ill-defined "qualitative discussion." (Staff Opening Brief, p. 20.) We reject this approach as well, in favor of the quantitative estimates of past water use based on Regional Board records, (Ex. 187.) and the reliance of expert testimony upon water use as a measure of entrainment impacts. (6/6/02 RT 16.)

We have also rejected Duke's argument that the baseline should be the period from market restructuring and Duke's acquisition of the MBPP in 1998 until filing the AFC in 2000. (Ex. 266, p. 103.) We have favored a longer horizon over which to average the baseline water use. However, we note that this injects a

[75] Our determination of the appropriate CEQA baseline is discussed in greater detail in the section of this Decision entitled Soil and Water Resources.

level of conservatism by “burdening” Duke with responsibility for MBPP water use figures for the years 1996 and 1997. In those years the existing plant was owned by PG&E, a regulated utility, not then subject to the current regulatory environment. Since water use by the MBPP was far lower in those two years, their inclusion reduces the average figure for the baseline. However, this is just one of many conservative steps we have taken in evaluating potential Project impacts on the important aquatic resources of Morro Bay.

The established baseline of the existing MBPP is an annual daily average of 387.2 mgd, compared to the proposed Project’s permit limitation of 370 mgd, a 4 percent reduction in cooling water use on a long-term basis. Applicant’s expert witness testified that a more realistic estimate of actual annual daily average is likely to be 328 mgd. This estimate was not persuasively rebutted by other parties and based on the evidence of record, we find it to be reasonable. The 328 mgd level represents a 15 percent reduction of water usage relative to the baseline. Peak short-term use of the existing plant is based on the capacity of the existing pumps at 668 mgd. Maximum capacity of the pumps for the Project will be 475 mgd, a 29 percent capacity reduction. The proposed Project also will have a slower water intake velocity and a greater ability to control pumping levels, matching pumping to electric loads. Thus, the weight of evidence establishes that the Project will have a reduced impact on once-through cooling water use compared to the existing plant.

Furthermore, the weight of expert testimony established that it is appropriate to correlate water use and entrainment impacts over time. The more water pumped by the Project, the greater the entrainment impacts upon small aquatic organisms. This is consistent with the experts’ use of goby larvae as a proxy for all impacted species, since these larvae were found to be ubiquitous in the cooling intake water. Expert testimony established this relationship and Conditions of Certification limitations to pumping on a maximum daily, and annual daily average, basis provide an enforceable means of regulating both peak and long-term entrainment impacts.

Staff, however, was not satisfied that these limits would reduce aquatic impacts to below that of the existing MBPP and argued that long-term assessments of water use do not capture seasonal spawning peaks and valleys of various species.

> "Significantly, the proposed daily cap is the stated capacity of the new pumps, which could, under applicant's proposal, be operated all day, for weeks, for even months, including at periods of time when organism concentrations are very high. The unpredictability of natural phenomenon (spawning, egg laying, transport events, etc.) surrounding the Morro Bay ecosystem does not allow for confident forecasting of the higher or low concentration periods for lower power plant entrainment opportunities. Any responsible assessment will therefore use the maximum daily pumping capacity for determining impacts." (Ex. 198, p. 9.)

Thus, because the plant may be running at its maximum capacity during a key spawning event, Staff argued that the maximum capacity is the appropriate measure of impacts, at all times. We agree that it is appropriate to compare the Project's maximum capacity of *short-term* impacts to the maximum *short-term* capacity of the existing plant; in this case the proposed 475 mgd compared to the existing 668 mgd. However, Staff seeks to compare the proposed Project's *maximum short-term* water use to the *long-term average* water use of the existing plant. The two measurements are not appropriately comparable and we reject the analysis as an "apples to oranges" comparison.

Furthermore, there is no evidence supporting an assumption that the new plant maintenance schedules, outages or other operational changes will correlate differently with spawning events than those of the existing plant. Staff's own witnesses testified that there is no meaningful or predictable correlation: "[b]oth power plant operation and bay/estuary species life cycle events vary annually, and when considered together, they vary to an unpredictable degree." (Ex. 197, 2-26.) We recognize that it would be informative to correlate evidence of a significant and predictable seasonal spawning peak with evidence of a predictable period of maximum operation for the Project's cooling system.

However, Staff has not provided substantial or persuasive evidence of such a correlation. To the extent that spawning and peak generation have coincided in the past, a comparable correlation at the new Project is likely to reveal reduced impacts.

However, the Staff position involves speculating a worst-case scenario wherein the Project operates at full load throughout a spawning peak. Yet, the record lacks evidence of when the Project would operate at maximum load, for how long it would maintain that level, and whether or not such a level of operation would correlate with a significant peak in spawning. The weight of evidence requires us to reject the Staff theory.

We must also reject Staff's attempt to find a significant cumulative impact by combining Project impacts due to entrainment, impingement, and existing stressors in the estuary. These elements are not separate "projects" as required for a cumulative CEQA analysis. Staff has clearly failed to follow CEQA guidelines in this regard. (CEQA Guidelines Sections 15355, 15130(a)(1); 6/6/02 RT 285-287.) Furthermore, since the effects noted by Staff are all part of the existing baseline, the reduced impacts of the Project will result in fewer combined impacts than now exist.

Thus, we find that compared to the existing plant, the Project will have fewer impacts involving entrainment. Its variable pumping capacity and reduced intake velocities will reduce impingement impacts. Furthermore, expert testimony establishes that the Project will present no increase in thermal impacts from its discharge water. In addition, it will not contribute to any significant adverse indirect or cumulative impacts.

In an attachment to its comments on the PMPD, the Coastal Commission staff states that the PMPD was not correct in assuming a CEQA-type baseline of the existing environment when determining compliance with the Coastal Act. Rather,

the Coastal Commission staff argues that the baseline for purposes of determining the consistency of a project with the Coastal Act is similar to the baseline for the Clean Water Act. That baseline is described in this decision as a "zero impact" baseline which does not necessarily incorporate existing impacts or facilities that may be affecting the existing environment. To evaluate the Coastal Commission staff's assertion, the Committee directed the parties to comment on the argument.[76]

CEC staff suggests avoiding use of the "baseline" and instead approaching the issue by carefully distinguishing between the underlying mandates of CEQA and the Coastal Act and the findings required for each, pursuant to the Warren-Alquist Act. Applicant argues that the Coastal Commission staff position is wrong and irrelevant. Wrong because any baseline applicable under the Coastal Act must be in reference to an existing environment baseline similar to the one used under CEQA. Duke argues the Coastal Commission staff position is irrelevant because none of the CEC findings regarding the Coastal Commission Report are related to any baseline.

To examine this we look to the policies of the Coastal Act cited by the Coastal Commission staff in its comments. Public Resources Code section 30230 states:

> Marine resources shall be maintained, enhanced, and, *where feasible*, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes. (*emphasis added)*

Section 30231 states that biological productivity of marine waters,"… shall be maintained and, *where feasible*, restored through, among other means,

[76] See Committee Order, dated July 7, 2003.

minimizing adverse effects of waste water discharges and entrainment…" (*emphasis added*)

The CC staff letter states that for both policies the language is absolute, rather than relative and that resources must be protected regardless of existing impacts.

While the Energy Commission has relied upon a CEQA baseline to determine whether the proposed Project will significantly increase impacts to the environment, we also examined at great length the feasibility of dry cooling as an alternative to the Project's once-through cooling system. The Coastal Commission found that the CEC staff recommendation to use dry cooling is feasible. However, after reviewing an extensive evidentiary record developed in this case, including the sources relied upon by the Coastal Commission, we have determined that dry cooling is not feasible for the proposed Project at the available location. In adjudicating that issue, we applied the definition of feasible used in both the CEQA Guidelines and the Coastal Act. (tit. 14, Cal. Code of Regs. section 15364; Pub. Resources Code section 30108.)[77] The adjudication of the issue of dry cooling feasibility was carried out without reference to any baseline but was based upon multiple factors which supported our finding that the dry cooling alternative is not feasible.[78]

CEC staff argues that the Coastal Commission may find that a project is not in compliance with the Coastal Act because it does not include feasible measures

[77] "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

[78] "In sum, the weight of credible evidence clearly establishes that specific problems including site constraint, prohibitive costs, legal issues of non-compliance and significant visual, land use and likely, noise impacts render the proposed cooling alternatives not feasible for use at the Project site." (PMPD, p. 320.)

to enhance and restore marine resources even though the Energy Commission has determined that the project will not cause any significant additional adverse impacts under CEQA. Yet in this case the Coastal Commission has recommended steps which we have specifically found to be not feasible. Furthermore, in the case of the dry cooling alternative, because we have determined it to be infeasible, any requirement imposing its use would likely result in failure of the proposed Project and likely would result in the continued, more harmful pumping of the existing power plant without any related HEP. We find this to be more harmful to marine resources than the proposed Project with its accompanying substantial funding for habitat improvement in the estuary.

2. Thermal, Impingement, and Entrainment Effects

Under Section 316(b) of the Clean Water Act [33 USC, §§316(a) and (b)], enforced by the Regional Board, Project impacts are measured against a zero impact. Section 316(a) requires the protection of a balanced indigenous community of organisms in the receiving waters of the cooling system discharge. Section 316(b) requires the use of best technology available BTA to minimize environmental impacts of operating the cooling water intake system. The Regional Board has determined that the Project is a new source as defined in the Clean Water Act section 306. (33 U.S.C. 1316) For the purpose of making its required determinations under CEQA, the Regional Board as a responsible agency, will rely on environmental decisions by the Energy Commission, as lead agency. In addition to determining the environmental impacts of the Project, the Commission must also determine whether the Project complies with applicable LORS, including those of the Clean Water Act. In order to determine compliance, we must adjudicate the evidence which forms the basis of such compliance.

The evidence establishes that overall the thermal effects from the Project will not be a significant factor on the marine environment. (Ex. 266, p. 70-71.) The

maximum permitted temperature difference between outlet and receiving waters will drop from the present 30 degrees F to 20 degrees F. (6/6/02 RT 257.) The Project will cause no increase in thermal discharge and is deemed "not unreasonable" by expert witnesses for the Regional Board. (*Id*. RT 256.) The Project's thermal discharge will also comply with the California Thermal Plan, as interpreted by the Regional Board staff. (Ex. 312.)

We also find that impingement effects of the Project are very low. The proposed new plant will reduce intake approach velocities by 40 percent and will shut down circulating pumps during periods of low power demand, further contributing to lower impingement. (Ex. 266, p. 43.) Periodic dredging in front of intake structures, required by the Regional Board NPDES permit, may further reduce impingement rates. (Ex. 312, p. 13.) Thus impingement impacts, which are relatively low at the existing plant, will be further reduced at the Project and will comply with the requirements of the Clean Water Act.

To determine the Project's impact due to entrainment, the Technical Working Group designed an entrainment study which sampled the organisms found in the intake waters throughout Morro Bay.[79] The majority of fish (approximately 75 percent) were unidentified gobies and 71 percent of invertebrates were identified as brown crabs.[80] The TWG determined that based on the information available to them, the appropriate method to interpret the gathered data was to use proportionate mortality or PM. The estuary contains a multitude of species, but the TWG was unable to calculate estimates for all species. Therefore, a target species was identified and the assumption was made that mortality calculations for the target species can be applied to other species as well. (6/6/02 RT 16-20.)

[79] Aquatic Biological Resources Figure 1 shows the locations of the five sampling stations for collecting larvae.

[80] The TWG was unable to derive estimates for other invertebrates or zooplankton or phytoplankton or algal spores or other non-fish. (6/6/02 RT 17.)

The parties used the PM method applying several different assumptions to determine a PM of 9.7 percent for Duke and 16.2 to 30.8 percent for the Regional Board staff.[81] However, these estimates of PM do not represent commensurate losses to adult populations or to overall productivity in the estuary for several reasons. First, not all species are vulnerable to entrainment. (6/6/02 RT 14-15.) Second, no evidence exists of a relationship between the number of larval losses and the health of adult populations. (Ex. 197, p. 2-11; 6/6/02 RT 157.) In fact, if PM estimates were commensurate with adult population losses then, assuming the Regional Board staff's PM estimates of 30.8 percent, the estuary would theoretically contain none of the species vulnerable to entrainment after little more than a dozen years. However, after experiencing the existing plant's cooling water withdrawal for 50 years, it is clear the estuary has not suffered this fate. (6/6/02 RT 288-290.)

A third factor that distinguishes PM mortality in larvae from the number of healthy adults in the estuary is that massive mortality of the vulnerable larvae is normal, whether the power plant exists or not. (*Id*. RT 202, 291-292.) Finally, the location of the plant's intake structure is near the mouth of Morro Bay, where tides sweep out of the estuary a high percentage of larvae otherwise subject to entrainment. (Ex. 266, p. 65-66.) For these reasons it would be misleading to equate proportional mortality of larvae with a comparable effect on species in Morro Bay. (6/6/02 RT 319-320.) Nevertheless, all expert witnesses agreed that even the lowest estimates of PM for larvae show a sufficient Project impact due to entrainment to trigger the requirements under section 316(b) of the Clean Water Act that require the use of BTA at the Project's cooling intake.

Three of the assumptions used to calculate PM were agreed upon by the parties. The only dispute concerning these assumptions is whether they represent an

[81] These values have been adjusted to account for a 370 mgd annual average daily intake. They correspond to the unadjusted calculations of 8.9 percent for Duke and 17 to 33 percent for the Regional Board staff. (Duke Opening Brief, Group IV, App. A.)

accurate or a conservative approach. The first assumption is that of 100 percent mortality due to entrainment. The Duke witnesses submitted testimony regarding power industry studies showing entrainment survival rates for larval fish and vertebrates exceeding a mean average of 50 percent and total survival rates of 88-98 percent for naked goby. (Ex. 266, p. 68.) While the Regional Board staff witness pointed out that none of these studies followed surviving organism in open water following entrainment, we find the fact of survival at such high rates adequately establishes that 100 percent mortality of entrained species is an unquantified conservatism in the PM analysis for this Project.[82]

The second agreed-upon assumption is the analysis by the Regional Board staff which assumes 427 mgd average daily cooling water use at all times. This represents approximately 90 percent of the Project's maximum pumping capacity during duct firing. We believe that market conditions and maintenance outages will actually reduce this to a capacity no greater than the 80 percent testified to by Applicant's expert as a conservatively high likely operating percentage. Thus, we find that the assumption used in the calculations for operating the plant is conservatively high.

The experts also assumed that no compensatory response was taking place in the estuary. Mechanisms of compensatory mortality work to increase growth rates, survival and reproduction among the reduced number of surviving members of a species. Several of the expert witnesses agreed that this is a well demonstrated principle, although not quantified for Morro Bay. (Ex. 266, p. 70; Ex. 276.) The witness for the Regional Board staff testified that the effect could not be quantified due to both an inability to determine the carrying capacity of the

[82] The Federal Register discusses environmental impacts of cooling water intake structures and makes clear that the assumption of 100 percent mortality due to entrainment is a conservative assumption: "The mortality rate of entrained organisms varies by species; mortality rates for fish can vary from 2 to 97 percent depending on the species and life stage entrained. Naked Goby larvae demonstrated mortality rates as low as 2 percent whereas bay anchovy larvae mortality rates were as high as 97 percent. Macro invertebrate mortality ranged from 0 to 84 percent for several species evaluated, but rates were usually less than 29 percent. (Environmental Impacts Associated With Cooling Water Intake Structure, 67 Fed. Reg. 17136 (Apr. 9, 2002).)

estuary and the lack of data needed to establish the constancy of that carrying capacity. While these factors make quantification problematic, they do not, in our view, obviate the fact that this too is a conservative assumption in the PM analysis.

i. Disputed Assumptions

The foregoing discussion accepts that the three assumptions which are agreed upon by the parties collectively provide some degree of a conservative buffer against uncertainty. We believe that this is appropriate given data uncertainties and the importance of protecting the Morro Bay National Estuary. The effect of each assumption is to create a tendency towards increasing the proportional mortality calculation. (6/6/02 RT 199.) Duke experts agreed with this approach as to the three assumptions discussed above. However, they disagreed with other assumptions and testified that different, and in their view, "more reasonable" assumptions are appropriate for the remaining three factors in the PM calculation. Duke urges that this is needed in order to not overstate Project impacts and thereby distort reality. On the other hand, Staff for the Commission and the Regional Board has adopted the position that maximizes assessments of mortality for each of the disputed assumptions. (*Id*. RT 200.) The three assumptions involve 1) the use of weighted versus simple averages for the abundance of species at risk, 2) whether to analyze separately or combine the ocean and estuarine species and, 3) the use of mean as opposed to maximum exposure times for larvae subject to entrainment.

For each of the species that the Technical Working Group agreed should represent entrainment effects, PM figures for the specific specie were averaged to find an overall proportional mortality rate. Duke's expert testified that some fish species "... were collected in orders of magnitude of more abundance than others." (6/6/02 RT 93:18-19.) Duke argues logically that the contribution of very low abundance larvae should be given less weight than that of the high

abundance species in assessing PM. In the opinion of Applicant's witness, weighting the averages based on the abundance of data is in accordance with commonly accepted statistical principles. (6/6/02 RT 94.) Staff's witness accepted this approach for determining larval fish loss, but points out that the fish larvae are merely proxies for many other organisms that were not included in the calculation for overall PM but are likely to experience impacts. (Ex. 197, p. 2-11.) Staff believes weighted averages essentially ignore the impacts on all the unaccounted for, yet impacted, species.

While we recognize the logic of Applicant's position concerning the appropriateness of weighting averages based on the most abundant data, we are concerned with the necessary limits on the constructs applied in the section 316(b) analysis. Some calculations simply do not accurately reflect the percentage impacts upon certain species, such as Combtooth Blennies, which show larval losses of 72 percent. (Ex. 272, p. 5.) We find that the limitations of the available data coupled with the importance of the Morro Bay Estuary and its status as an impacted water body compel us to apply Staff's very conservative approach of using simple averages.

The second disputed calculation for PM is whether it is appropriate to separate proportional mortality calculations for ocean and estuarine species. Duke argues a broader environmental view, evaluating both the estuary and ocean together. This is because larvae exported from the estuary by tidal forces serve an important function in the ecosystem outside the estuary. The value of this estuary-ocean exchange has been acknowledged by the Regional Board staff. (Ex. 267, pp. 5-6.) Duke criticizes the Staff approach which says on the one hand that Morro Bay has value to the ocean ecosystem, while simultaneously treating it like a lake for purposes of the PM calculations. Staff counters that to determine Project impacts on the estuary, it is necessary to separate the calculation for estuarine and ocean species, since by far the greatest impacts are to estuary species. Furthermore, Staff argues that the vast difference in the

amount of source water for the ocean versus the confines of Morro Bay causes the lower impact figure for ocean species to artificially depress the PM calculation for estuary species.

This part of the debate appears to us to be one of focus; that is, whether to examine the big picture or one more attuned to local impacts of the Project on the estuary and potential mitigation for those impacts. Duke's approach reflects the reality of the exchange between the bay and ocean. However, as will be discussed later in this Decision in the section on the Habitat Enhancement Plan (HEP), all of the steps necessary to support a HEP which is adequate for a BTA determination, must take place inside the estuary. In a sense, when the Commission and the Regional Board consider what constitutes an adequate Habitat Enhancement Program for compliance with BTA, there is no proposal which addresses impacts to ocean species. Rather, all HEP projects would be completed within and for the benefit of the estuary. While these projects may also improve the estuarine environment for some ocean species which use the estuary temporarily, the benefit or enhancement must take place within the estuary. The importance of protecting the impaired and valuable estuary causes us to support the Commission and Regional Board staff's approach and base PM calculations upon estuarine species alone.

The final dispute concerning PM calculations is whether to use the maximum rather than the mean exposure times. Consultants for Duke sampled species coming into the existing plant and identified the size and age of the species.[83] This resulted in an identified group of individuals that were actually taken into the plant, and another potential group that could be entrained because they are small enough, although they were not drawn into the plant.[84] (*Id*.) The evidence shows

[83] Witness for the Regional Board and the Commission staff, Dr. Peter Raimondi said about this data collection, "That was an immense amount of work, and I think that they did that very well." (6/6/02 RT 21:14-15.)

[84] The elaborate calculations for determining the number of larvae at risk but not actually entrained were explained by Dr. Raimondi at the evidentiary hearing. (6/6/02 RT 23-31.)

that using a mean of exposure times, as Applicant recommends, results in an age for larvae of 4.25 days, which captures 77.6 percent of all entrained larvae. Commission and Regional Board staff urge the use of the maximum age of 20.7 days. While this latter figure captures data for all exposed larvae, only about one-tenth of one percent of the larvae entrained were 20 days old. (6/6/02 RT 106.) The witness for the Regional Board acknowledged that this is the source of the greatest discrepancy between the analyses of Duke and those of the Commission and Regional Board staffs, and represented, "a valid difference of opinion." (*Id*. RT 12, 31:10.) It also results in vastly different estimates for the loss rate of individuals. (*Id*. RT 23.)

Several factors cause us to find that the mean exposure time more accurately represents the actual entrainment risk to larvae. Staff urges that evidence of 20-day old larvae is proof that larvae are at risk for that full 20-day period. However, this age is represented by only 0.1 percent of larvae. We are also concerned that the Staff recalculation method emphasizes a maximum rather than a reasonably accurate figure. This calculation is made all the more suspect because of the extraordinarily small size of the sample on which the calculation must rely. Finally, we are convinced that the tidal flow is sufficiently rapid in the area of the cooling water intake to overcome much of the effect of the reduced-velocity intake flow for the Project. Thus, because the risk of entrainment involves both the age/size of the organism and the possibility of contact with the intake structure, we believe the latter risk is considerably reduced by tidal currents. In addition, the evidence shows that the concentration of larvae in the water at the intake is less than at other points surveyed deeper in the estuary. (Ex. 197, Table 4, p. 2-14.)

We have found that the undisputed elements of the proportional mortality calculation are each conservative steps. In addition, our determinations to use simple rather than weighted averages, and to include only estuarine species in the calculation, while supported by substantial evidence, are clearly a nod

towards a conservative analysis which is more protective of the estuary. However, we find that the use of maximum exposure time, as recommended by Energy Commission and Regional Board staff, is not justified and overstates the actual PM impacts of the Project. Therefore, based on the weight of evidence, we find that the Project will have a proportional mortality due to entrainment of 16.2 percent of larvae. Under the Clean Water Act such an effect requires the use of Best Technology Available. Our discussion of measures to meet that requirement is found in the Habitat Enhancement Program section of this Decision.

As noted above in our discussion of Project impacts pursuant to CEQA, we have found that, when properly compared to the baseline of the existing plant, the Project will have no significant adverse environmental impact on aquatic biological resources. As a result, no mitigation is required to reduce a significant impact. Nevertheless, in the following section we address the feasibility of alternative cooling proposals which were explored as potential mitigation measures pursuant to CEQA and as possibilities to meet BTA requirements of the Clean Water Act.

In addition, we have included a condition similar to one adopted in the Moss Landing Power Project decision.[85] The condition, BIO-2, requires Applicant to identify space on site for the use of a marine mammal urgent care facility.

We have deleted Condition **BIO-5** to avoid any potential conflicts with the language of the Regional Board's NPDES permit, the final version of which has yet to be adopted. Furthermore, Condition **BIO-6** requires Applicant to comply with all the conditions of the NPDES permit, including the temperature limits addressed in the deleted **BIO-5**.

[85] Commission Discussion on Moss Landing Power Project, Docket no. 99-AFC-4, Nov. 2000, pub no. P800-00-008. Condition B10-8, p. 199.

In its letter of June 13, 2003 commenting on the PMPD, the Coastal Commission staff argues that the PMPD fails to establish a legal basis for rejecting the Coastal Commission's ~~findings and~~ recommendations (including the recommendation that the Project be required to use dry cooling). The comment goes on to cite several disagreements with this Commission's determinations, many of which are separately addressed in the sections of this Decision on Terrestrial Biology, Alternative Cooling, and Habitat Enhancement Plan. We have thoroughly reviewed the record in light of comments from the Coastal Commission staff, the Energy Commission staff, CAPE, and Applicant. As a result we have made several revisions.

.

Contrary to the comments of CAPE, we have not "ignored" or "dismissed" the specific recommendations of the Coastal Commission. To the contrary, we have carefully reviewed the evidentiary record and incorporated every Coastal Commission recommendation which we believe is supported by substantial evidence, is feasible and will not cause greater harm to the environment.

It is our considered judgment that the proposed Project with a Habitat Enhancement Plan will do more to maintain and enhance marine resources in the Morro Bay estuary than will continued operation of the existing plant. Alternative dry cooling is not feasible for the Project and therefore we find that all feasible measures to comply with the Coastal Act have been required in this Decision. Furthermore, we have adopted all recommendations of the Coastal Commission ~~which are technically and legally~~ that are feasible. We have added several findings to clarify our decision.

In its comments on the PMPD, Intervenor CAPE further argues that, although the Commission cited the Porter-Cologne Act (Water Code § 1300 et seq.) as

applicable, we failed to address its requirements as applied to the Project. Section 13142.5(b), cited by CAPE reads as follows:

> For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.

As made clear in the section of this Decision on Alternative Cooling, we have specifically found dry cooling not to be feasible for this Project at this site. This Decision's Conditions of Certification, including an adequate habitat enhancement program, the details of which will be determined by the Regional Board, include all feasible mitigation measures and thus complies with section 13142.5(b) of the Porter Cologne Act.

FINDINGS OF FACT

1. The existing Morro Bay plant has operated at the same location for fifty years using once-through cooling with intake volumes significantly greater than those proposed for the modernized Project.

2. In 1987 Congress created the National Estuary Program (NEP), funded in part by the Environmental Protection Agency (EPA). In 1995 Morro Bay was designated as one of the 28 estuaries in the United States to be classified as a National Estuary. The goal of the NEP is to identify, restore, and protect nationally significant estuaries of the United States.

3. Section 303(d) of the Clean Water Act allows for the designation of impaired water bodies and results in Total Maximum Daily Load requirements for the estuary and watershed. Morro Bay has been placed on the impaired water body list due to declining quality and health of the system and is afforded extra protection due to this designation.

4. Although USEPA administers the National Estuary Program, program decisions and activities are carried out by committees of local government officials, private citizens, and representatives from other federal agencies, academic institutions, industry, and estuary user-groups. These stakeholders work together to identify problems in the estuary, develop specific actions to address those problems, and create and implement a formal management

plan to restore and protect the estuary. A Comprehensive Conservation and Management Plan (MBCCMP) has been prepared for Morro Bay. The MBCCMP identifies the priority problems facing the estuary as sedimentation, bacterial concentrations, nutrient concentrations, fresh water flow reductions, heavy metals and toxics, habitat loss (through sedimentation primarily), and steelhead loss. It does not identify the existing power plant as a problem.

5. Once-through cooling has the potential to impact aquatic biological resources through thermal impacts, impingement and entrainment.

6. The Clean Water Act, section 316(a), addresses thermal discharges from power plants that use once-through cooling and requires that the discharge of cooling waters shall assure the protection and propagation of a balanced, indigenous population of marine wildlife in the body of water receiving the discharge.

7. The record shows that the modernized plant will not have a significant thermal impact on these resources either in the absolute sense pursuant to the Clean Water Act or relative to the existing plant, pursuant to CEQA.

8. Section 316(b) of the Clean Water Act), addresses impingement impacts where organisms are caught on the screens of a power plant's cooling water intake structure. Relevant EPA regulations adopted on February 16, 2004, call for impingement to be reduced on existing plants by 80 to 95 percent from uncontrolled levels.

9. Current cooling water intake velocities of the existing plant are .5 ft/sec. As a result of modernization, these velocities will be reduced to .3 ft./sec, a 40% reduction. The evidence supports the conclusion that impingement impacts of the Project are not significant either in the absolute sense or relative to the existing plant.

10. Section 316(b) of the Clean Water Act), addresses entrainment impacts where organisms are drawn into a power plant's cooling system. Relevant EPA regulations adopted on February 16, 2004, call for the number of aquatic organisms entrained by an existing power plant to be reduced by 60 to 90 percent from uncontrolled levels.

11. Entrainment primarily increases or decreases as a function of the amount of cooling water withdrawn. Therefore, the amount of cooling water usage is an appropriate measure, and based on this record, the best evidence of the impacts of entrainment effects.

12. Not all species in Morro Bay are affected by entrainment. However, both the existing plant and the Project will expose some fish and crab larvae to a risk of entrainment until they achieve a certain size. The record lacks scientific basis for determining the impact of larval entrainment on adult populations of the susceptible species.

13. The intake structure of the power plant is located near the entrance to the estuary where tidal action is substantial. It is undisputed that larvae exposed to the intake structure are also exposed to tidal forces that would likely carry many of these larvae out of the estuary absent entrainment.

14. Entrained larvae are subject to mortality within the cooling intake structure due to temperature, pressure and consumption as food by predatory organisms living within the cooling water system.

15. No legally protected species were identified among samples of entrained larvae.

16. For the purpose of comparing the impacts to larvae of the existing plant against those of the proposed Project, it is reasonable to make separate comparisons of each plant's respective peak cooling water usage and of each plant's respective long-term cooling water usage.

17. As regards peak usage, Duke proposes to replace the existing 668 mgd capacity pumps with pumps having a maximum capacity of 475 mgd. This represents a 29% reduction in maximum cooling water capacity. In addition, the new pumps will have variable speed capability that will further reduce cooling water usage for given plant output. Therefore, the Project will substantially reduce peak cooling water use, and thus likely reduce peak entrainment impacts, compared to the existing environment.

18. As regards long-term usage, the Committee has determined that the appropriate baseline under CEQA for measuring impacts relative to the existing plant is the existing plant's average annual cooling water use during the years 1996 through 2000. The annual average during those years was 387.2 mgd. The Committee evaluated other reasonable baselines and made its selection in part to enhance a conservatively protective analysis of Project impacts on the Morro Bay National Estuary.

19. Applicant has proposed an annual daily average of 370 mgd that we adopt as a Condition of Certification. Applicant will, therefore, be required to achieve at least a 4% reduction in long-term cooling water withdrawals relative to the Committee's adopted CEQA baseline. Therefore, the Project is likely to reduce long-term cooling water withdrawals and associated entrainment impacts relative to the existing environment.

20. To determine compliance with section 316(b) of the federal Clean Water Act, it is relevant to determine whether the entrainment impacts of the proposed plant will be significant relative to no cooling water use at all.

21. For this purpose, the record contains estimates of proportional mortality (PM), a measure of the risk of entrainment for those species susceptible to entrainment.

22. As regards PM assumptions, it is appropriately conservative to assume that all entrained larvae do not survive, notwithstanding substantial evidence of survival. This assumption is appropriate to provide a safety margin and to err on the side of environmental protection.

23. It is also appropriately conservative to assume that the plant will operate at 100% of its maximum daily annual average capacity (370 mgd) notwithstanding evidence that the plant will operate less. We do this to provide a safety margin and to err on the side of environmental protection.

24. It is also appropriately conservative to assume there is no compensatory response by species that are subject to entrainment. This conservative assumption is appropriate to provide a safety margin and to err on the side of environmental protection.

25. It is appropriate to use simple averages rather than weighted averages in calculating PM because simple averages capture more effectively the impact of entrainment on the widest range of species, even where some species have been sampled in low abundance. Using simple averages will also tend to produce a more conservative estimate of PM than will a weighted average and is reasonable and appropriate in light of the need to provide a safety margin and to err on the side of environmental protection.

26. It is appropriate to calculate PM by separating ocean and estuarine species because the greatest entrainment impacts occur to species that spawn in the estuary, rather than the ocean. Separating ocean and estuarine species is reasonable and appropriate in light of the need to apply the most conservative assumptions which can result in analyses that provide a safety margin and err on the side of environmental protection for the impaired estuary.

27. It is appropriate to calculate PM using the mean time of exposure to entrainment (4.25 days) rather than the maximum (20 days) because the data show that only one-tenth of one percent of entrained larvae were 20 days old. It is not reasonable nor appropriate to assume that all susceptible larvae are exposed to entrainment based on a characteristic which actually represents only a miniscule fraction of larvae.

28. The mean exposure time of 4.25 days corresponds to evidence in our record showing that larvae are typically flushed from the estuary by tidal forces within 5 days.

29. The power plant uses less than 10 percent of the water in the estuary for cooling and takes this water from a location where larval densities are generally comparable or lower than at other measured locations within the estuary.

30. Based on the foregoing findings regarding assumptions, as well as the evidence of larval densities and cooling water withdrawals, we find that an estimated PM of 16.2% for the modernized plant's entrainment effects is both environmentally protective and plausible given the continued abundance of larvae in Morro Bay notwithstanding 50 years of plant operations.

31. This amount of entrainment is potentially an adverse and important impact relative to no cooling water use and requires, pursuant to the Clean Water Act, the use of the best technology available to reduce, eliminate or

compensate for the entrainment. This subject is discussed in the Habitat Enhancement Program section of this Decision.

32. Coastal Commission staff was involved in numerous meetings, hearings and deliberations related to this proceeding.

33. The Coastal Commission's recommendations make repeated reference to, and apparent reliance upon, the CEC staff's FSA analysis.

34. The evidence of record establishes that many portions of the CEC staff's FSA analysis concerning coastal impacts are erroneous, unsubstantiated, or outweighed by other credible evidence of record.

35. The Commission has carefully considered the Coastal Commission's recommendations following the close of evidentiary hearings.

36. With regard to the Coastal Commission's recommendation of dry cooling, we find that this technology is not feasible for this Project at this site. We further find that to require dry cooling based on the design sizes presented for consideration at evidentiary hearings, including that prepared by the Commission staff and declared feasible by the Coastal Commission, would result in less benefit to the Morro Bay estuary than the proposed Project with an adequate habitat enhancement program. The evidence further establishes that requiring dry cooling would most likely prevent the Project from achieving its stated purposes and result in the continued operation of the existing plant with its established level of impacts. In either scenario, the use of dry cooling would have a greater adverse effect on the environment than the proposed Project with a HEP.

CONCLUSIONS OF LAW

1. Modernization of the Morro Bay Power Plant with reduced use of once-through cooling and the Conditions of Certification proposed herein will not cause any significant, direct, indirect or cumulative adverse impacts within the meaning of CEQA.

2. There is no need to consider alternatives to once-through ocean cooling pursuant to CEQA because such cooling will not have a significant, adverse environmental impact pursuant to CEQA.

3. Entrainment of certain larvae in and of itself is a potential adverse impact requiring the use of the "best technology available" as defined by Clean Water Act section 316(b).

4. Modernization of the Morro Bay Power Plant with reduced use of once-through cooling and the Conditions of Certification proposed herein will comply with all applicable laws, ordinances, regulations and standards

including, but not limited to, sections 316(a) and 316(b) of the Federal Clean Water Act. The means by which the Project will meet the "best technology available" standard is discussed in the Habitat Enhancement Program section of this decision.

5. ~~We have adopted all of the recommendations of the California Coastal Commission in its report pursuant to Public Resources Code section 30413(d) except for those recommendations that are not feasible or that would impose a greater adverse effect on the environment. Accordingly, the Project as approved, will comply with the applicable provisions of law governing the compliance with the California Coastal Act when considered in combination with the Warren-Alquist Act~~

   As required to be constructed and operated under the Conditions in this Decision, the project will (1) protect coastal waters from adverse impacts of wastewater discharges and entrainment; (2) maintain, enhance, and, where feasible, restore marine resources; (3) minimize adverse impacts to the biological productivity of coastal waters, including minimization of discharge and entrainment; and (4) protect environmentally sensitive habitats from the degradation of habitat value. Therefore, the project complies with the Coastal Act.

CONDITIONS OF CERTIFICATION

BIO-1 Following the certification of the Morro Bay Power Plant project, the project owner will provide payment for a habitat enhancement program to a dedicated account (established with the Central Coast Regional Water Quality Control Board or a suitable Foundation. According to the terms set forth by the CCRWQCB, the amount and timing of such payment shall be identified in the NPDES permit for the Morro Bay Power Plant Project.

Verification: Within 30 days following the deadline for payment set by the CCRWQCB in the NPDES permit, the project owner will provide written verification to the Energy Commission CPM and the CCRWQCB that the dedicated account has been established and the initial payment made. A copy of the check provided to the dedicated account shall be included with the written verification.

BIO-2 The project owner will:

- Identify space or a portion of the plant site for the Marine Mammal Center (MMC) to operate a "triage unit" for the care of marine mammals in need of medical assistance;

- Identify the potential to develop a long term lease that is free of charge to the Marine Mammal Center (or a comparable organization) that features a renewable option for the operating life of the Morro Bay Power Plant Project.

Verification: At least 30 days prior to commencement of construction of new generation facilities (excluding tank demolition), the project owner shall provide a report to the CPM demonstrating compliance with the above requirements.

BIO-3 Cooling water flow shall not exceed 475 mgd at any time, and shall not exceed 370 mgd on an annual daily-average basis (the average of the daily average flows for a year).

Verification: Within 30 days of completion, the project owner shall send to the CPM copies of the project's quarterly reports to the RWQCB including daily cooling water flows calculated from the measured capacity of each pump and its daily hours of operation and the annual average of volume, and average-hourly effluent temperature data to verify that cooling water flow volumes were kept below a total of 475 mgd and annual daily average of 370 mgd. The data shall be presented graphically to illustrate the daily pump volume totals over time.

BIO-4 The project owner shall minimize cooling water flows by managing cooling water flows and effluent temperature relative to power output. Whenever possible, and consistent with prudent operation, the project owner shall shut down cooling water pumps to minimize cooling water flow and minimize temperatures near the NPDES permit limit, without exceeding the effluent temperature limit.

Verification: The project owner shall send to the CPM copies of the project's quarterly reports to the RWQCB including average-hourly power generation, calculated average-hourly flow volume, and average-hourly effluent temperature data to verify that cooling water flow volumes were kept at minimum levels. The data shall be presented graphically to illustrate the relationship between these three variables over time.

BIO-5 Deleted.

BIO-6 Project owner shall comply with the terms and conditions of a National Pollutant Discharge Elimination System (NPDES) permit issued for the proposed Project by the Central Coast Regional Water Quality Control Board. The NPDES permit and its terms and conditions shall, upon adoption by the Regional Board, be incorporated into this Decision.

Verification: Within 30 days of completion, the project owner shall send to the CPM copies of the project's quarterly and annual NPDES reports to the RWQCB, including any notice of violation and corrective action taken during the year.

C. ALTERNATIVE COOLING OPTIONS

Early in the AFC process, Staff became concerned regarding potential impacts of the Project's once-through cooling system on aquatic biology. Therefore, Staff began to examine options to reduce the Project's impacts caused by the use of estuarine waters for cooling. At the request of the Executive Director of the Regional Board, Staff undertook a large-scale analysis of dry and hybrid cooling options. This began with the basic information contained in the 316(b) study (Ex. 66.) and involved exchanging information with Duke, which increased in detail as the analysis evolved.[89] The analytical process has been deliberative and comprehensive, involving the Staff of the CEC, an independent consultant from the Regional Board, an engineer from CAPE, and a representative from GEA Power Systems, a principal vendor and builder of dry cooling and hybrid cooling systems. Thus, by the time of our evidentiary hearing on cooling options, the parties had been looking at the possible options for up to two years, in increasing levels of design detail.

First of all, the controversy concerning dry cooling is not in regard to the technology itself. It is undisputed that dry cooling is feasible and has been used in many applications around the world. In fact, one of Duke's witnesses testified that in the appropriate location it not only works, but that Duke has experience with the technology and is currently building a project using dry cooling, in Moapa, Nevada. (6/5/02 RT 31.) Furthermore, it is undisputed that the use of closed-system cooling would greatly reduce, if not eliminate impacts to aquatic biological resources from impingement, entrainment, and thermal discharge. What is at issue is whether the various cooling options, and in particular that of dry cooling, are feasible at this particular power plant site.

[89] A summary of the extensive record analyzing various cooling options is found in Exhibit 228, pp. 65-68. This summary does not, however, include the 14 exhibits offered at the evidentiary hearings of June 5 and 6, 2002.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Staff analyzed three different cooling options: 1) wet cooling towers, 2) hybrid-cooling systems and, 3) dry cooling. Wet cooling was rejected early on due to the limited amount of freshwater and treated water from the Morro Bay water treatment plant. Ocean water for use in cooling towers was rejected largely due to the concern from salt air emissions in cooling tower drift. (Ex. 197, App. A, p. 23.) Duke points out that the Morro Bay area contains insufficient emission offset credits to compensate for the estimated 500 pounds per day of saltwater drip particulate that would come from salt water cooling towers. (6/5/02 RT 16.)

Staff analyzed a parallel condensing hybrid cooling tower system using treated reclaimed water that would use both dry and wet cooling tower technologies. (Ex. 197, App. A, p. 23, 31-37.) Applicant's analysis of this proposal demonstrated a lack of sufficient fresh water or wastewater available, as well as serious noise and visual impacts. (6/5/02 RT 26-28.) Staff acknowledged that the hybrid option could not meet local noise standards and was therefore not feasible. (*Id*. RT 164.) Thus, the analysis focused on dry cooling proposals.

Potentially, there are two legal bases for examining dry cooling alternatives. The first is as a means to avoid a potential significant environmental impact within the meaning of CEQA and the second is for such a system to serve as "best technology available", or BTA, under section 316(b) of the Clean Water Act.

1. CEQA

In the previous section of this Decision which addresses aquatic biological resources, we found that the proposed Project with its once-through cooling system operating at lower levels than that of the existing plant, will have no significant impact on aquatic resources, pursuant to CEQA. There is no legal basis for mitigation of insignificant impacts under that act. Thus, none can be required. However, in a situation where such mitigation or alternative is

appropriate as mitigation for a significant impact, the CEQA guidelines require that the alternative must feasibly attain most of the basic objectives of the project while avoiding or substantially lessening any of the significant effects. [CEQA Guidelines § 15126.6(a)] As we discuss further *infra,* the Staff dry cooling proposal eliminates the less-than-significant impacts of once-through cooling while imposing new and significant noise, land use, and particularly visual impacts on the Morro Bay community.

The proposal also fails to meet several legitimate objectives of the Project. The first of these is the objective of reducing the visual impacts to the community of the existing power plant. Duke presented a Project to the Commission in its first AFC filing on August 31, 1999. That application was withdrawn and the Project totally redesigned in consultation with the City, largely to achieve the objective of demolishing the entire existing power plant and replacing it with a much smaller facility further removed from the Embarcadero. (Ex. 4, p. 1-17.) Thus, achieving a dramatically reduced visual impact is an important objective of the Project, and is arguably the most important objective to the local community. CAPE argues that no substantial evidence exists for the central nature of this objective (CAPE Reply Brief, p. 16.) However, we note that Applicant's withdrawal of its AFC and refiling it a year later for the purpose of meeting local community objectives is unprecedented. We can reasonably assume that the refiling, largely in response to concerns about visual impacts of the existing plant, is a major, if not a fundamental project objective. Furthermore, City support for the Project, as set forth in the draft Agreement to Lease, is critical to access rights for the Project. The City has adopted several resolutions in opposition to a dry cooling alternative and has stated that the easements will not be made available to the Project if dry cooling is required.

Duke's proposed Project also includes the addition of approximately 200 megawatts of duct-fired peaking capacity. Applicant has optimized this feature and states that achieving peaking capacity is a fundamental objective of Duke's proposed Project. (Ex. 228, p. 6.) However, Staff conducted its analysis

regarding the feasibility of dry cooling and hybrid cooling based on designs not optimized for the Applicant's proposed use of duct firing. (Ex. 197, App. A, p. 131.) As shown in Duke's testimony, the difference between Staff's and Duke's proposed performance criteria is dramatic, even when applied to baseload operation and ignoring the use of duct firing. Staff's smaller condensers used in the Staff analysis would cause a loss in output for both baseload and duct-fired operation. (Ex. 228, Figure 1, p. 7; 6/5/02 RT 60.)

Staff argues that the assumptions for its dry cooling design merely relied on design parameters provided by Duke, while Applicant argues that Staff erred in its assumptions. We do not address this dispute, but rather focus on the fact that Staff's proposed design with duct firing would cut the peaking capacity of the plant in half (from 200 megawatts to 100 megawatts) at the 64 degree temperature of a typical summer afternoon in Morro Bay. (Ex. 198, p. 12; Ex. 228, Figure 1, p. 7; 6/5/02 RT pp. 169-170.) Staff's alternate proposed design without duct firing would eliminate all of the peaking capacity of the proposed Project. (*Id*.) Furthermore, this loss in peaking capacity would occur on summer afternoons, when it is most needed and valuable. Staff has attempted to restate the objectives of the Project to eliminate or severely reduce duct-firing capacity. (Ex. 197, App. A, p. 2-3.) We reject this approach and find that the Staff alternative has failed to meet a legitimate and significant Project objective.

Both Staff and CAPE, in their comments on the PMPD, have objected to the Commission finding that the Staff alternative cooling proposals failed to meet basic Project objectives in part because the alternatives do not allow for the same amount of peaking power as the proposed Project. Staff specifically asks for a finding that,"…a reduction in the amount of peaking capacity does not *necessarily* render an alternative inconsistent with legitimate project objectives." (Staff Comments on PMPD, p. 11; *emphasis added.)* In Staff's view, the language in the PMPD could unnecessarily limit Commission discretion to consider alternatives that generate less power than a proposed project.

While we do not share Staff's concern that the language of the PMPD must be so narrowly construed, we also have no intension of limiting the Commission's discretion over project size solely to the project capacity proposed by an applicant. However, in the instant case, Staff has proposed a cooling alternative which would cut peaking capacity of the proposed Project in half. CAPE argues that this 100 MW loss of peaking capacity is less than a 10 percent reduction of the Project's 1200 MW capacity and is therefore not a significant reduction. However, a more relevant consideration is that the loss of half the Project's *peaking* capacity is significant. In fact, it represents more capacity than many stand-alone peaking plants licensed by the Commission. Given the facts of this case, we find that our concern over the potential loss of half the Project's peaking capacity does not amount to defining the basic objectives of the project in a narrow manner.

Staff's own witness clarified the value that peaking power has for the state's electrical system. Peaking capacity allows a power plant to be more flexible than a facility that is completely baseload, and this flexibility makes the electrical system less brittle and more robust in responding to sudden increases in electrical demand. (12/17/01 RT 98-101.)

2. Clean Water Act

While CEQA requires a determination of a Project's significant environmental impacts compared to the existing environment, requirements under the Clean Water Act are less relativistic and more absolute. The NPDES permit for the Project must contain a finding that the cooling water intake structure (CWIS) constitutes "best technology available" (BTA) for minimizing adverse environmental impact. The BTA finding must be supported by substantial evidence in the record, such as the results of impingement and entrainment studies of the plant's discharge or other relevant information relating to aquatic biological resources potentially affected by the plant's intake. The BTA must also

be available commercially at an economically practicable cost. Relevant factors include capital costs, operation and maintenance costs, energy costs, costs of delay, debt service, costs of reengineering studies, costs to rate payers, etc. Consideration of economic practicability is done on a case-by-case basis. Technologies whose costs are determined to be "wholly disproportionate" to the environmental benefit to be gained are not considered feasible, and thus not BTA. (65 Fed. Reg. 49060, 49094, Aug. 10, 2000.)

In addition to cost, section 316(b) requires analysis of the non-water quality-related impacts, including energy costs, associated with alternative cooling technologies as well as environmental considerations such as noise, visual, land use, and cultural resources. Section 316(b) has also been interpreted by EPA to allow restoration or habitat enhancement programs (HEP) to be implemented as BTA in lieu of alternative cooling technologies.[90] Applicant's HEP proposal is addressed in the next section of this Decision.

Applicant testified that dry cooling at Staff's Alternative Site No. 1 would require an additional capital cost of $196 million. (Ex. 228, p. 46.) At Alternative Site No. 2, it would require an additional capital cost of $106 million. (*Id*.) Applicant's testimony adds that dry cooling also degrades the efficiency of the power plant and thus requires additional fuel to achieve the same nominal output. Duke notes that additional operations and maintenance costs will be incurred as well. The testimony concludes that when these additional costs are added to the increased capital cost, the overall lifetime cost on a present-value basis of dry cooling at Alternative Site No. 1 is $253 million. At Alternative Site No. 2, the overall present-value cost is $163 million. (Ex. 228, p. 47.)

Duke points out that at least $110 million of the total capital cost estimates for Alternative Site No. 1 would result directly from the physical constraints at the

[90] *See* 66 Fed. Reg. 65256 (December 18, 2001), at pps. 65280-65281and 65314--65315; *See also* 67 Fed. Reg. 17122 (April 9, 2002), at pps. 17146-17148 and 17168-17173.

site, which add substantial costs during construction. The largest of these costs involves the 14 to 18-month additional schedule delay required because the dry cooling facilities must be built after the new power block construction is essentially completed. These additional expenses arise from added interest costs resulting from the extended construction schedule. (6/5/02 RT 31; Ex. 232, p. 8.)

The witness for the Staff opined that Duke's cost estimates are overstated. (6/5/02 RT 159.) However, Applicant countered that in fact, its estimates are conservative and likely understate the true costs. As an example, Duke notes that it has not assumed any costs related to avoiding the existing underground cooling water discharge tunnels because it has not yet determined what steps would be required to deal with the tunnels. In addition, the representative from GEA Cooling Systems testified that, based on current industry standards, both Staff's and Duke's designs are undersized by 30%. (6/5/02 RT 120.) Presumably, proper sizing would add additional costs.

Duke's position is that the costs of dry cooling are so high that even without a detailed economic analysis, Applicant knows it would not build the proposed power plant project if dry cooling was required. (Ex. 228, p. 60; Ex. 267, p. 2; 6/5/02 RT 138-139.) Applicant's testimony states that for the purposes of any "best technology available" analysis pursuant to Section 316(b) of the Clean Water Act, these costs are wholly disproportionate to the benefits of the cooling alternatives. Furthermore, Duke argues that the costs of dry cooling are also wholly disproportionate to a habitat enhancement approach that would provide a greater ecological productivity benefit to the estuary over the long term. (Ex. 267, p. 16-19.) Of particular note in this regard is the fact that the Regional Board staff has relied upon the FSA determination that dry cooling is feasible at the Project site. Yet even relying on this assumption, which we find is not supported, the Regional Board staff recommends that, "the watershed and Estuary would realize a greater long-term benefit through habitat enhancement." (Ex. 267, p. 2.)

Pursuant to the Clean Water Act, the Regional Board is the proper body to determine whether the costs associated with dry cooling alternatives are "wholly disproportional" to their potential benefits. However, for our part, we find that the weight of evidence supports Applicant's cost estimates and that these costs represent close to 25 percent of the entire estimated cost of the $800 million proposed Project.

CAPE disagrees with the cost appraisal above and states in its comments that the PMPD arbitrarily ignored a report on the cost of dry cooling prepared for the Regional Board by Tetra Tech[91]. CAPE alleges that the Tetra Tech report was entered into evidence as exhibit 248. In fact, the Tetra Tech report is not contained in the evidentiary record of this case. Exhibit 248, which CAPE cites, is actually a preliminary critical evaluation of the Tetra Tech report sent by Duke to the Commission staff and to the Regional Board on January 24, 2002. In the critical evaluation, Duke faults the Tetra Tech report for using an incorrect steam flow rate and temperature design points for an adequately sized dry cooling facility. The exhibit also claims that Tetra Tech chose a generic dry cooling design not specific to the requirements of the Morro Bay site. It concludes that the Tetra Tech report (as well as the Staff report) contains fundamental flaws which significantly understate the impacts of alternative cooling systems. (Ex. 248.) While the Regional Board staff did rely on the Tetra Tech report in its Draft NPDES Report (Ex. 312, pp. 21-22.), the Commission has relied upon the more site-specific and detailed evidence presented under oath and subject to cross examination at the hearing on June 5, 2002.

[91] Tetra Tech report to the Central Coast Regional Water Quality Control Board: *Evaluation of Cooling System Alternative: Proposed Morro Bay Power Plant,* May 2002.

3. Constructability Issues

Cost, however, is not the only recommendation against the use of dry cooling at this particular site. Applicant's witnesses also testified about numerous issues concerning the constructability of any of the dry cooling proposals. While Duke owns property in Morro Bay amounting to 107 acres, only a 20 acre site is available to construct the proposed Project. Any dry cooling facility would have to fit into to this area, along with the proposed power plant and related facilities. The site boundaries are made up of the existing PG&E transmission switchyard, the Morro Creek riparian corridor, Willow Camp Creek, a requisite transmission corridor, and surrounding roads. (6/5/02 RT 14-15; Ex. 228, p. 79, sheets 1-6.)

The space limitations of the site mean that dry cooling Alternative 1, suggested by Staff, would require the demolition and relocation of existing equipment and buildings.[92] However, Staff's analysis did not address the cost or feasibility of relocating these facilities or of additional facilities related to any dry or hybrid cooling system. (Ex. 168, pp. 137-138.) Furthermore, it is necessary to maintain operation of the existing facility during construction of the new units and many of these ancillary facilities are essential to operation and maintenance of the old plant. This is an added cost not considered by Staff. (6/5/02 RT 179.)

The Staff cooling alternatives also eliminate all construction staging and lay-down areas adjacent to the site. This would make construction activities more difficult. (Ex. 228, p. 32.) In addition, the alternative cooling structures could not be built until after the majority of the power block is completed and all large cranes are removed from the area, creating the primary reason for the 14 to 18 month estimated delay in Project construction due to the addition of dry cooling. Duke

[92] Dry Cooling Alternative 1 would require the demolition of the following existing facilties: Peregrine Building, fire house #2 building, fire water tank, pump station, berm, and oily water separator. (Ex.168, Fig. 7, p. 39.)

witnesses also noted that the closed-cycle cooling structures could not be built directly over the existing underground seawater discharge tunnels without impacting costs and the schedule. This could result in the premature shutdown of existing Units 1 through 4. (Ex. 228, p. 33.)

These and other problems cited by Duke in its testimony would force a significant extension to the construction schedule amounting to 14 to 18 months.[93] In addition, once the plant is constructed, the location of the closed-cycle condensers would greatly complicate maintenance of the power plant. (Ex. 228, p. 34.) While Staff suggested gantry cranes could eliminate some of site constrain problems concerning maintenance; such cranes would increase the height of plant structures by 25-35 feet. Increases in the height of plant buildings would not only create additional visual impacts, but can effect air quality requirements as well. The Staff analysis did not address this fact. (6/5/02 RT 57.)

The size of the dry cooling facilities at the limited site could also require that transmission lines, which access the switchyard, be placed underground. If required, it would significantly increase costs and further delay the schedule. (Ex. 228. p.33.)

Staff's alternative 2 would require extending steam duct lines, thus effecting plant performance. (Ex. 228, p. 35.) The construction schedule for Alternaitve 2 would extend the project construction schedule by four to six months.

It is also clear from the record that, at least in terms of analyzing the environmental impacts of dry cooling, the Staff did not consider maintenance and access requirements for the project. (6/5/02 RT 174.) Applicant's witnesses testified that Staff's alternative could not be properly maintained at the site due to

[93] Reducing the length of the Project's construction period was of "great importance" to City of Morro Bay representatives. (6/5/02 RT 133:12-17.)

space limitations which would prohibit required access for large cranes used in periodic maintenance. (Ex. 228, p. 34.)

The witness from GEA Systems, who testified on Duke's behalf, stated that the site was not large enough to accommodate any of the dry cooling alternatives presented. (6/5/02 RT 65-68.) He also pointed out that building air-cooled condensers next to the operating PG&E high voltage switchyard would present an "undue risk" to his company. (*Id*. RT 119.) The witness stated that in his professional opinion, dry cooling is not feasible at the Morro Bay site. (*Id*. RT 65-68.) Later, during cross-examination he elaborated:

> "In my opinion, this site does not have the available space to support a dry cooling system for the size combined-cycle power plant." (*Id*. RT 117:20-24.)

We are particularly persuaded by this testimony because the same witness testified that, based on current industry standards, even the larger dry cooling facility analyzed by Duke is undersized by 30 percent. (*Id*. 120:13-17.)

In addition, the cooling options present problems due to a lack of site control. Properly sized dry or hybrid cooling equipment will encroach upon the PG&E switchyard property, which Duke does not own. (Ex. 228, p. 10.) Even the smaller dry cooling design proposed by Staff may not fit on the site when the two units that house the cooling fans are sufficiently separated to accommodate pipe racks and other equipment. (*Id*.)

Furthermore, the Morro Bay City Council and Planning Commission have concluded that these dry cooling options "would adversely affect the City's beauty and uniqueness, would cause or exacerbate adverse effects on visual, noise, air quality, health, socioeconomics, hazardous materials, traffic and transportation, and other local natural resources, compared to the proposed Project." (6/5/02 RT 282: 18-24.) Based on these concerns, the City testimony

states that the City will not permit Duke to have the site control necessary for construction of a dry or hybrid-cooled plant. (Ex. 239, p. 14.)

Applicant has set forth a detailed and persuasive set of problems which make construction of adequate dry cooling at the Project site extremely expensive, time consuming, unsafe, and fundamentally infeasible. The response of witnesses for both the Staff and for CAPE was to generally challenge the conclusions of Duke's witnesses and argue that Applicant should focus its expertise more on optimizing its design for dry cooling than on trying to prove it infeasible. (6/5/02 RT 258.) However, Staff failed to provide any analysis regarding some of the specific constructability problems identified by Applicant. For example, with respect to relocation of existing ancillary facilities, Staff acknowledged that it had done no engineering study to determine whether these facilities could feasibly be relocated while maintaining the continued operation of the existing power plant. (6/5/02 RT 17.) Similarly, while Staff's rebuttal testimony suggests that crane access could be provided by temporarily displacing existing berms, on cross-examination Staff acknowledged that it had not made any attempt to review property ownership in the area to determine whether any permission from the City would be required. (*Id*. 181-182.) In fact, the Staff witness acknowledged that many of its recommendations had not been analyzed for feasibility but rather that the Staff was "tossing out possibilities". (*Id*. 183:2-6.) Staff acknowledges that its dry cooling analysis is a conceptual one. Yet dry cooling, as a technical concept is not at issue here. Rather we are concerned with the feasibility of dry cooling for a particular project at a particular site.

In his comments on the PMPD, Bill Powers, who appeared as a witness for CAPE concerning alternative cooling designs, commented on a number of ideas which he believes could reduce the size of a dry cooling structure for the Project. He raised the concept of using mechanical chillers for inlet air cooling, yet there appears to be no analysis of this in the evidentiary record. He also continues to advocate for a "split design" which would locate smaller dry cooling blocks at

both of the alternative sites considered by Staff. We considered this when he originally raised the concept during the hearing on alternative cooling. (6/5/02 RT 241.) This and several other conceptual ideas may have merit in some applications. However, as noted above, the general, speculative nature of Mr. Powers proposal does not establish that it is feasible at this site for this Project. Nor does it provide sufficient, specific evidence of feasibility to shift the burden of proof from CAPE to the Applicant. Were it otherwise, this and every other applicant who is challenged by a potential alternative would be forced to disprove the feasibility of every suggested conceptual alternative proposal.

We find this approach by witnesses for both Staff and CAPE to be unconvincing and lacking in specificity. Applicant has met its burden of proof in establishing that in order to construct an adequate dry cooling facility at the MBPP site, constructablity issues alone indicate that the dry cooling alternatives are not feasible.

In its comments on the PMPD CAPE suggests for the first time that many of the costs and challenges of dry cooling which arise from numerous site limitations would be eliminated if Applicant simply dismantled the existing power plant prior to beginning construction on the Project. Since neither CAPE, nor any other party, raised this during the hearings, the evidentiary record does not contain a cost estimate for the loss of generation revenue at the site during dismantling and new construction, a period of approximately 5 years. Furthermore, the record contains no analysis of the impacts upon the state electrical system of loosing all generation at the site for that period of time. We find the CAPE argument to be highly speculative.

4. Environmental Issues

The alternative cooling proposals also present significant environmental challenges, some of which render the alternatives infeasible. The primary problems arise regarding visual, noise, and land use impacts.

Visual: A dry cooling design which meets Duke's peaking requirements would require a structure 110 feet or more high and be larger than two football fields. The Staff's smaller proposal for a noise-mitigated dry cooling design is 426 feet long, 200 feet wide and 115 feet tall. These structures would both be about 11 stories high. In either case they would impose a significant visual impact on the City of Morro Bay and views of the coast and Morro Rock from Highway 101. Both Staff and Applicant agree that the proposed Project with once-through cooling will have far less visual impact than any of the dry cooling alternatives. (Ex. 197, App. A p. 107; Ex. 228, p. 11.) Whether properly sized to meet Project objectives or sized for the noise-mitigated design used in the FSA Appendix A, the addition of the dry cooling or hybrid structures will have significant visual impacts on the coast that cannot be adequately mitigated. The mass of the dry cooling units is too great to realistically expect that Staff's proposals for landscape mitigation would reduce the visual impacts of dry cooling to a level of insignificance. [94]

Furthermore, there are additional negative visual impacts from the pipe racks for Dry Cooling Alternative 2. These pipe racks, carrying 19-foot diameter pipelines, would rise 80 feet above sea level and/or 60 feet above the environmentally sensitive habitat area for a distance of approximately 300 to 400 feet. (Ex. 228, p. 12.)

Staff and CAPE argue that the dry cooling proposals are a visual improvement over the existing plant. However, we have determined that pursuant to CEQA, the once-through cooling would not have a significant impact. Thus, dry cooling is not required for CEQA mitigation and a comparison of the visual impacts of dry cooling structures to the existing plant is not relevant. Pursuant to the Clean Water Act, an analysis of dry cooling as BTA must weight the significant visual impacts of dry cooling against the lack of visual impacts of the proposed Project

[94] Proposed Conditions of Certification VIS-1, VIS-2, and VIS-3.

with once-through cooling system and a HEP. While the proposed Project will impose a large industrial element on the Morro Bay viewscape, it is a significant improvement over the existing power plant with its 450-foot stacks. However, to add dry cooling structures to the proposed Project would greatly enlarge the industrial imprint and significantly degrade the viewshed beyond any impacts of the proposed Project. It would be as if, in addition to the proposed power plant, several "big box" warehouse stores were constructed at the site, blocking or dominating the view of the coast from many vantage points. (Ex. 228, pp. 94-95; 6/5/02 RT 275-276, 295.) The visual impact of dry cooling would be sufficiently great to undercut the goal of the local community in the negotiated redesign of this proposed Project. That goal is to reduce the existing power plant's negative visual impacts.

Noise: The City of Morro Bay's noise ordinance requires, among other things, that noise from the facility not exceed 45 dBA at the nearest residential receptor at night. (Ex. 197, App. A, Table 12, p. 82.) Staff's analysis estimated that, for its smaller cooling design, the estimated (but not guaranteed) noise level data for a maximum noise mitigated configuration would produce the cumulative noise level for dry cooling Alternatives 1 and 2 of 45 dBA. (*Id*. RT 80-84.) For the hybrid cooling options, Staff concluded that noise levels would probably exceed legal limits at the nearest residences. (Ex. 197, p.87; 6/5/02 RT 164.) Because this likely LORS violation was not disputed, we have found the hybrid cooling proposals to be infeasible.

Duke argues that noise levels for the Staff design are exactly at the 45-dB limit with no margin for error. (6/5/02 RT 184.) In fact, Staff acknowledged that even a tenth of a dBA increase in actual noise above its estimates would cause the Project to be out of compliance with the City's noise ordinance. (6/5/02 RT 198.) Applicant points out that both Staff's and Duke's analyses were based upon noise estimates provided by the vendor, GEA Power Systems, and are not commercially guaranteed. (6/5/02 RT 185.) Thus, given the extremely small

margin for error, it is unlikely that Duke could obtain a commercial guarantee assuring compliance. If the Project with alternative cooling was built and then failed to meet the noise ordinance, there would be no reasonable method of significantly reducing the noise that would not also reduce the cooling system performance. (*Id*. RT 68-69.) Duke thus argues that Staff's determination that Staff's smaller design for alternative cooling is "feasible" with respect to noise, is theoretical and that Applicant cannot feasibly risk an $800 million facility on achieving non-guaranteed estimates to within a tenth of a decibel.

CAPE's witness testified that if the dry cooling alternatives were optimized it would be possible to achieve a 10 dB noise reduction without adding cooling cells to the structure. (*Id*. RT 243.) However, the evidence from GEA Systems shows that legal noise limits could not be guaranteed. As a result, the record shows that the ability of a dry cooling system at the site to meets LORS has not been adequately demonstrated and remains in doubt, even for the smaller design advanced by Staff.

In its PMPD comments, CAPE argues that Finding 14, regarding the risk that the Staff design may exceed the local noise ordinance, is not supported by sufficiently compelling evidence on which to base a finding of LORS noncompliance. While the evidence reveals that the smaller Staff design presents a substantial *risk* of non compliance, we have modified the finding to merely reflect that fact, rather than actual non compliance.

Land Use: Applicant's position is that Staff's dry or hybrid cooling designs are also infeasible because they 1) violate the primary zoning for the site, and 2) do not comply with various city ordinances and standards. (Ex. 228, pp. 13-19.) The City of Morro Bay also offered testimony showing that the dry cooling and hybrid cooling alternatives are inconsistent with the City's ordinances and standards. (6/5/02 RT 280-285.) As a result of the City's concerns about the size, height, location restraints, and serious environmental impacts presented by

the air cooling alternatives, the City has adopted several resolutions in opposition to the dry and hybrid alternative cooling proposals.[95]

A significant land use inconsistency concerns conflicts with Morro Bay's zoning of the site. Program LU-39.1 in the City of Morro General Plan and Policy 12.06 in the Coastal Land Use Plan (CLUP) require that the plant site be designated for coastal-dependent industrial use. Consistent with these plans, the property is zoned M-2, coastal-dependent industrial. (Ex. 228, p.14.) The CLUP defines the term "coastal-dependent industrial" consistent with Section 30101 of the Coastal Act, as an area for uses that must be "located on or adjacent to the sea in order to function." (*Id.*) The FSA acknowledges that elimination of the seawater cooling system would make the Project inconsistent with the base planning and zoning designations for this property. (Ex. 197, pp. 75-77.) Originally Staff recognized that this would require an override by the Commission of the City's zoning ordinance. However, revisions in the final FSA found that the zoning inconsistency might be avoided by reference to the Marine Resource Protection Policies of the Coastal Act.[96] This position was rejected by both Duke's expert witnesses and, apparently, even by the Staff's own land use expert. (6/5/02 RT 188-191.)

The Duke witnesses testified that the FSA analysis improperly confuses the separate roles of the City of Morro Bay and the Coastal Commission in the CEC process. The zoning in question is a local matter within the jurisdiction of the

[95] City Council Resolution No. 57-01 opposed methods that would exacerbate environmental impacts compared to the proposed Project. Planning Commission Resolution No. 01-01 (Ex. 242.) found that dry cooling could cause an unsightly and unnecessary [visual] blight on the community, may cause unnecessary noise, and would use prime land on the Embarcadero. City Council Resolution No. 20-20 found that alternative cooling as set forth in the Staff 's draft report would adversely affect the City's beauty and uniqueness.

[96] The FSA states: "A reasonable reading of the Coastal Act and the MBLCP that harmonizes these different sections suggests that the requirements for coastal-dependent industry should not prevent mitigation of adverse impacts from an expansion of an existing coastal-dependent power plant." Appendix A, p. 77.

City. The Coastal Act delegates to local agencies the interpretation and enforcement of the local coastal plans once they have been certified by the Coastal Commission. The City is free to adopt more restrictive provisions than the Coastal Act. The City of Morro Bay's LCP was certified by the Coastal Commission. Thus, the Duke witness testified, the City has the primary authority to interpret its zoning ordinance and has determined that the Staff's proposed cooling options would not be consistent with the M2 zone. In the face of this determination by the City, Duke and the City argue that the CEC may not approve Staff's proposed cooling options without an override finding under Public Resources Code section 25525. (Ex. 228, pp. 14-15.)

Staff's own witness, on cross-examination, acknowledged that to be coastal-dependent, a facility would have to be of a technology that must be located on or adjacent to the sea in order to function, and that a dry cooled facility does not meet that requirement. (RT 6/5/02 at p. 188-189.) The Staff witness also agreed that in this siting case, the Energy Commission, and not the Coastal Commission, would be the appropriate body to determine Project compliance with the Morro Bay zoning requirement. The witness acknowledged that this should be done by relying upon the plain meaning of the ordinance while placing great weight on the opinion of the City that would ordinarily enforce the ordinance. (RT 6/5/02 at pp. 189 -190.)

By contrast, the Coastal Commission found that the Project would be an expansion of an existing coastal-dependent facility. Thus, the Coastal Commission would continue to define the Project as "coastal-dependent" regardless of whether the Project retains once through cooling or changes to dry cooling. In short, the Coastal Commission found that dry cooling would be an allowable use under the City's LCP. (Ex. 320) Notwithstanding the conflicting evidence in the record, we defer to the Coastal Commission's determination on this question.

We have determined that, pursuant to CEQA analysis, the Project will not have a significant impact on marine resources. On the other hand, although the cooling alternatives would certainly further reduce or eliminate the remaining aquatic impacts of the proposed Project, all of these alternatives would also impose numerous other significant environmental impacts in the areas of visual, land use, and probably noise. Thus, imposing either of the dry cooling alternatives would cause greater harm to the overall environment in Morro Bay than would the proposed Project with an associated HEP. Furthermore, the fact that the cooling alternatives would themselves result in LORS violations would require the Commission to make "override" findings which cannot be made in this case. This problem is addressed later in the discussion.

In addition to zoning, the use of closed cycle cooling for this Project would violate many other local land use policies of the City of Morro Bay. The height and size of the closed cycle cooling structures conflicts with Morro Bay General Plan Policy LU-15 [requiring that the present human scale and leisurely, low density appearance of Morro Bay should be maintained through careful regulation of building height, location and mass]; Policy LU-38 [requiring small, high-quality, nonpolluting industrial development should be encouraged – such development should be an extension of existing development of this nature]; and Policy LU-39 [requiring "power plant expansion shall be limited to small facilities"]. (Ex. 228, p. 15; Exs. 226, 227.) Furthermore, the elevated noise level of the alternative cooling facilities will likely conflict with several objectives of the City's General Plan noise element. (Ex. 228, p. 16.) The visual impact of the closed cycle cooling structures also creates land use inconsistencies. (*Id.* 16-18.) In addition, Staff's Alternative Site Number 2 would be located in an environmentally sensitive habitat area (ESHA) in violation of numerous City land use policies and would create cultural resource impacts that violate other land use policies. (*Id.* p. 18-19.)

Because of the violations of numerous City of Morro Bay local zoning and land use laws described above, the Commission could not certify this Project with closed cycle cooling unless it could "override" all of the non-conforming ordinances. To carry out such an override pursuant to Public Resources Code section 25525,[97] the Commission would have to find that that "there are not more prudent and feasible means of achieving such public convenience and necessity." Since Duke's once through cooling system for the proposed Project complies with all applicable ordinances and standards, there does exist a more prudent, feasible means of achieving the public convenience and necessity of this Project. As such, the Commission could not lawfully find that the Project, which fully complies with applicable laws, is not more "prudent and feasible" than an alternative cooling design involving numerous environmental impacts and LORS violations.

In comments on the PMPD submitted by the Executive Director of the California Coastal Commission, the CCC stated that the PMPD "…does not establish a legal basis for rejecting the Coastal Commission's findings and recommendations…". In describing what it cites as a "fundamental legal flaw" in the PMPD, the CCC letter states the "Coastal Commission found that the CEC staff recommendation to require dry cooling is a feasible alternative to once through cooling." In fact, the CCC recommendation does not cite any independent analysis conducted by the CCC. Rather, it states in the staff report adopted by the CCC:

> 'We further find that, *based on available information*, the only feasible alternative configuration of the project that would conform to [marine resources policies of the Coastal Act and EHSA policies of the LCP]

---

[97] Public Resources Code Section 25525 provides that the Commission "shall not certify any facility…when it finds, pursuant to Subdivision (d) of Section 25523, that the facility does not conform with any applicable state, local, or regional standards, ordinances or laws, unless the Commission determines that such facility is required for the public convenience and necessity and there are not more prudent and feasible means of achieving such public convenience and necessity."

> would require the use of a dry cooling system rather than once-through cooling." (Ex. 320, p. 28, § 3.1.10, *emphasis added*.)

The transmittal letter of the CCC recommendation states,

> Further, the Coastal Commission supports the *CEC staff's finding* that dry cooling is a feasible alternative to once-through cooling. (Ex. 320, transmittal letter, p. 2, *emphasis added*.)

The Coastal Commission never provided any evidence or independent analysis of the feasibility of dry cooling for the Project, apart from the CCC's support of the CEC staff's assertion of feasibility in the FSA. It is clear that the CCC relied upon the CEC staff's analysis of dry cooling, rather than conducting one of its own. Yet the CEC staff's claim of feasibility for dry cooling and its analysis supporting that claim was extensively examined by this Commission at a formal evidentiary hearing on June 5, 2002.[98] No representative of the CCC attended the evidentiary hearing. However, a CCC staff member did listen by telephone. After all the evidence was received, he made the comment on the record that, "…we rely on staff's finding of feasibility in their review of conceptual alternative cooling designs." (6/5/03 RT 317: 17-19.)

Subsequently, in the PMPD, the CEC commissioners who personally heard the evidence on the feasibility of dry cooling for this Project, found that the CEC staff's evidence was not credible and found that dry cooling for the proposed Project is not feasible. Having based this determination on our independent adjudication of all the substantial evidence of record, we cannot agree with the CCC's determination that dry cooling is feasible. This is especially true when the CCC apparently relied upon the very CEC staff analysis which we rejected. To make our determination as clear as possible, we have added an additional finding and conclusion to this section.

[98] The day-long hearing included the testimony of 20 witnesses among four different parties. All witnesses were available for cross-examination by each of the parties, by the hearing officer, and by the two CEC commissioners who served as the committee for this AFC.

In sum, the weight of credible evidence clearly establishes that specific problems including site constrains, prohibitive costs, legal issues of non-compliance, and significant visual, land use and likely, noise impacts render the proposed cooling alternatives not feasible for use at the Project site.

Public Comment

During the public comment period, **Dan Chia** of the California Coastal Commission stated that if the City of Morro Bay issues a coastal development permit for the Project, that permit would be subject to the Coastal Commission's appeals jurisdiction. (6/5/02 RT 316.) He also commented that the local coastal program or LCP includes applicable zoning ordinances. Finally he pointed out a letter dated May 29, 2002 sent to Commissioners Keese and Boyd from Peter Douglas, executive Director of the Coastal Commission. The letter was in support of the dry cooling proposal and stated the Coastal Commission's reliance on the CEC staff's FSA and the FSA's determination that dry cooling is feasible. (*Id.* RT 317.)

Comments in support of Staff's dry cooling proposal came from **Laura Hunter** of San Diego, **Leslie Neely-Smith,** and City Council Member **Colby Crotzer** of Morro Bay. **Nelson Sullivan,** and **Mandy Davis** stated their disagreement with City Council opposition to dry cooling. **Pam Soderbeck** expressed the view that the Planning Commission was ill informed when it supported the proposed Project. **Richard Smith** and **Colleen Johnson** each stated their belief that if another local referendum were conducted on the power plant proposal, it would not pass as it did before. **David Nelson** told of personally observing an abundance of fish life at the outfall for the existing plant.

John Hammond, representing the 19,000 members of the Plumbers and Pipefitters Union Local 409, expressed support for the Project without dry cooling and with a habitat enhancement plan. **Bill Olson** delivered a letter expressing

the same position and signed by 169 local citizens. **Kim Kimball** expressed a similar view in support of Duke's proposal on behalf of the Morro Bay Chamber of Commerce. City Vice Mayor **William Pierce** referenced two resolutions from the Morro Bay City Council and one from the Planning Commission, all opposed to the dry cooling proposal. Former City of Morro Bay Mayor **Bill Yates** stated his view that industry and the bay are coexisting in the Morro Bay harbor and that the bay teams with life. Current Mayor **Roger Anderson** stated that the estuary is best protected through up-stream mitigation projects identified by the NEP in the MBCCMP. He sees Duke's HEP proposal as a way to fund this protection for the estuary. Both he and **Jim Wood** expressed their opinion that most citizens would prefer keeping the existing power plant rather than submit to a new one that included dry cooling. Mr. Wood also gave his opinion that the CEC staff analysis is biased. City Planning Commissioner **John Barta** opined that the CEC staff had "double-crossed the citizens" of Morro Bay concerning dry cooling. (*Id.* RT 360:15.)

FINDINGS OF FACT

1. Closed-cycle cooling is an alternative to once-through ocean cooling that consists of three basic types: 1) cooling towers; 2) hybrid cooling; and 3) dry cooling.

2. A determination of feasibility of an alternative must be made in the context of the specific project and specific site at issue and not merely on the conceptual feasibility of a technology generally. A conceptually feasible technology may or may not be feasible for a specific project at a specific site.

3. Both cooling towers and hybrid cooling require fresh water that is not reasonably available at this site. These technologies, therefore, are not feasible at this site. In addition, the noise impacts of hybrid cooling at this site are significant and not mitigable.

4. Dry cooling is a technology consisting of large radiator-like structures that dissipate heat from the plant into the atmosphere without the use of ocean water. Dry cooling would have the benefit of eliminating all intake of ocean water and associated entrainment effects and therefore

merits the careful consideration the Commission has given it in this record.

5. The record contains substantial evidence of Staff's extensive conceptual analysis of alternative proposals using hybrid cooling and dry cooling technologies, as well as expert testimony from Applicant and other parties commenting upon and critiquing the Staff conceptual proposals.

6. The Applicant has proposed duct firing to provide 200 megawatts of additional peak capacity from this Project. This provision of additional peaking capacity is reasonable and constitutes an important objective of the Project.

7. Both Staff and CAPE have proposed dry cooling alternatives for this Project that are not sufficiently sized to accommodate the peak capacity objective of the Project. The dry cooling alternative proposals from Staff and CAPE would cut the peaking capacity of the Project in half (by 100 megawatts) on a typical Morro Bay summer day. We find that loss of peaking capacity constitutes a substantial failure to meet a key objective of the Project.

8. Staff's proposed noise-mitigated dry cooling design is 426 feet long, 200 feet wide and 115 feet tall. A design that meets the peaking requirements of Duke's Project would measure 640 feet by 185 feet by 110 feet - approximately 40% larger. These structures are the equivalent of a building eleven stories tall and covering more than two football fields.

9. Installation of these large structures would have substantial adverse visual impacts relative to the proposed facility and would eliminate one of the principal benefits and objectives of the modernization Project from the perspective of the City residents.

10. The Morro Bay site contains only 20 acres available for new power plant construction. This is a tightly constrained area for the construction of a power plant.

11. Dry cooling at Staff's Proposed Alternative Site No. 1 would require an additional capital cost of $196 million. At Alternative Site No. 2, it would require an additional capital cost of $106 million. The overall lifetime cost on a present-value basis of dry cooling at Alternative Site No. 1 is $253 million. At Alternative Site No. 2, the overall present-value cost is $163 million.

12. Hybrid cooling at Alternative Site No. 1 would require an additional capital cost of $201 million, and additional overall life cycle present-value cost of $261 million. At Alternative Site No. 2, the total capital cost increase would be $111 million, and the overall present-value life cycle cost would be $171 million.

13. These costs are much higher at this site than for other power plant sites due to the size of the site and related constraints. At least $110 million of the total capital cost estimates for dry cooling at Alternative Site No. 1 result directly from such constraints. These include the costs of dealing with the variety of site constraints, and most significantly, the costs of the 14 to 18 month additional schedule delay required because the cooling facilities must be built after the new power block construction is essentially completed.

14. Installation of closed-cycle cooling will increase the noise from the power plant due to the noise generated by the cooling fans. The City of Morro Bay's noise ordinance requires, among other things, that noise from the facility not exceed 45 dBA at the nearest residential receptor at night. Staff concluded that all variations of closed-cycle cooling would violate this requirement with the possible exception of Staff's smaller, "noise-mitigated" design at Alternative Site No. 1 and its undersized hybrid cooling design at Alternative Site No. 2. For these designs Staff concluded that the noise would exactly equal the 45dba standard. However, these noise estimates are not commercially guaranteed and there is no evidence of reasonable means for reducing the noise from the closed-cycle facilities should the standard not be met. Accordingly, we find there is a risk of non-compliance with applicable noise standards for any closed-cycle cooling alternative.

15. The Morro Bay site is zoned M-2, coastal-dependent industrial. The City's conclusion that a dry-cooled facility would not be "coastal dependent" and would therefore violate the City of Morro Bay's zoning ordinance is reasonable.

16. The Coastal Commission has found that the Project is an expansion of an existing coastal-dependent facility and that it would continue to be defined as "coastal-dependent" regardless of whether the Project retains the once through cooling that was the basis for its original qualification as a coastal-dependent facility, or implements dry cooling. Thus the Coastal Commission found that dry cooling would be an allowable use under the City's LCP.

17. Public Resources Code section 25523 (d)(1) states that the Energy Commission must determine whether a project complies with all applicable laws. Accordingly, the Energy Commission is not bound by

determinations of conformity or non-conformity issued by the Coastal Commission or other state, regional or local agencies.

18. Notwithstanding the above finding, the Energy Commission, as a matter of policy, will give great deference to the recommendations of state, regional, and local agencies particularly when such agencies are interpreting matters within their legal jurisdiction.

19. We therefore accept the Coastal Commission's determination that the Project would continue to be deemed "coastal-dependent" even assuming a lack of once-through cooling.

20. The height and size of the closed-cycle cooling structures conflict with Morro Bay General Plan Policy LU-15 [requiring that present human scale and leisurely, low-density appearance of Morro Bay should be maintained through careful regulation of building height, location and mass]; Policy LU-38 [requiring small, high-quality, nonpolluting industrial development should be encouraged – such should be an extension of existing development of this nature]; and Policy LU-39 [requiring "power plant expansion shall be limited to small facilities"]. Closed cycle cooling at Staff's Alternative Site Number 2 would be located in an environmentally sensitive habitat area (ESHA) in violation of numerous City land use policies. Use of this site would also create cultural resource impacts that violate various land use policies.

21. Properly sized dry or hybrid cooling equipment will encroach upon the PG&E switchyard property, which Duke does not own. In addition, if either dry or hybrid cooling were required for the Project, Duke would lose access to property of the City of Morro Bay which Applicant asserts is necessary for construction and operation of the facility. Accordingly, it is unlikely that Duke could obtain the site control necessary for a dry or hybrid-cooled facility.

22. The Morro Bay City Council and Planning Commission have concluded that the closed-cycle cooling options "would adversely affect the City's beauty and uniqueness, would cause or exacerbate adverse effects on visual, noise, air quality, health, socioeconomics, hazardous materials, traffic and transportation, and other local natural resources, compared to the proposed Project." Because of these concerns, the City testimony makes clear that the City will not permit Duke to have the site control Applicant believes is necessary for construction of a dry- or hybrid-cooled plant. Accordingly, it is unlikely that Duke could obtain the site control necessary for a dry- or hybrid-cooled facility.

23. The PG&E property immediately adjacent to construction area of the modernized plant contains PG&E's existing high-voltage substation.

There are significant safety and liability issues associated with using large cranes and other construction or maintenance equipment within or immediately adjacent to such a substation.

24. Closed-cycle cooling would make construction and maintenance of the power plant at this site considerably more complicated and expensive than the proposed Project.

25. Installation of closed-cycle cooling structures at Staff's Alternative Site No. 2 will have significant, adverse impacts to environmentally sensitive habitat, and cultural resources.

26. The vendor of closed-cycle cooling systems has concluded that, at the Morro Bay site, such systems are not feasible and the vendor would not recommend them.

27. The use of either dry cooling alternative at the Project site would cause greater harm to the overall environment of the Morro Bay community than would the proposed project with its associated Habitat Enhancement Plan.

28. Based on the combination of costs, delays, impediments and risks associated with closed-cycle cooling at this site, we find this alternative is not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Therefore, we find that this alternative is not feasible for this project at this site.

29. For the same reasons, we find that the costs of this alternative are disproportionate to its benefits and are prohibitive. Imposition of these costs would likely result in a decision by the Applicant to abandon the modernization Project and continue operation of the existing once-through cooled facility.

30. With regard to the Coastal Commission's recommendation of dry cooling for the Project, if ~~we find pursuant to~~ Public Resources Code section 25523(b) ~~were~~ is applicable to this project, we ~~would~~ find that for both the smaller-sized dry cooling proposal of the Commission staff or that of the Applicant, this technology is not feasible at this site. We ~~would~~ further find that in the case of either size dry cooling design, this technology would result in greater adverse effect on the environment compared to the once-through cooling and habitat enhancement program we approve in this decision.

CONCLUSIONS OF LAW

1. The specific dry-cooling alternatives of Staff and CAPE, fail to satisfy the requirement of CEQA that an alternative meet most of the key objectives of the project.

2. Closed-cycle cooling, including dry-cooling as proposed by Staff and CAPE or adjusted in size to meet the objectives of the project, is not feasible at the Morro Bay site within the meaning of CEQA or the Clean Water Act.

3. For the purposes of exercising our responsibilities under the Warren-Alquist Act, we conclude that closed-cycle cooling does not constitute the "best technology available" for this power plant within the meaning of Clean Water Act section 316(b) because it is not feasible at this site and because the costs are wholly disproportionate to the benefits.

4. ~~We have adopted all of the recommendations of the California Coastal Commission except those that we have determined are not feasible or that would impose a greater adverse effect on the environment. Accordingly, the Project as approved with these recommendations will comply with the applicable provisions of law governing compliance with the California Coastal Act and the Warren-Alquist Act.~~

As required to be constructed and operated under the Conditions in this Decision, the project will (1) protect coastal waters from adverse impacts of wastewater discharges and entrainment; (2) maintain, enhance, and, where feasible, restore marine resources; (3) minimize adverse impacts to the biological productivity of coastal waters, including minimization of discharge and entrainment; and (4) protect environmentally sensitive habitats from the degradation of habitat value. Therefore, the project complies with the Coastal Act.

5. The California Coastal Commission has determined that the Project with once-through cooling and a Habitat Enhancement Program does not comply with the City of Morro Bay's Local Coastal Program and with the Coastal Act. To the extent that these determinations apply to this Project, the Commission has overridden the applicable portions of the Local Coastal Program and the Coastal Act.

VI. LOCAL IMPACT ASSESSMENT

All aspects of a power plant project affect, in differing degrees, the community in which it is located. The effect of the various elements of a project upon the local area varies from case to case depending upon the nature and the extent of the community and of the associated impacts. In the present case, the technical elements discussed in this portion of the Decision are those addressing likely areas of potential local concern.

A. LAND USE

The discussion of the land use impacts for the Morro Bay Power Plant Project focuses on two main issues: the conformity of the Project with local land use plans, ordinances, and policies; and the potential of the Project to have direct, indirect, and cumulative conflicts with existing and planned uses. In general, a power plant project can be incompatible with existing or planned land uses when it creates unmitigated noise, dust, public health hazards or nuisances, traffic, or visual impacts, or when it significantly restricts existing or future uses.

In reviewing whether a land use impact is significant, we refer to the following CEQA criteria:[155]

- Would the Project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Would the Project disrupt or divide the physical arrangement of an established community.
- Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

[155] 14 Cal. Code of Regs., section 15000 et seq., Appendix G.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Coastal Access provisions of the Warren-Alquist Act, the California Coastal Act of 1976, the City of Morro Bay General Plan/Coastal Land Use Plan, City of Morro Bay Zoning Ordinance, and the City of Morro Bay Waterfront Master Plan, as well as San Luis Obispo County Land Use Plans and Ordinances are the primary land use provisions relevant to the Morro Bay Power Plant Project. (Ex. 143, pp. 3-1 through 3-9.)

In addition, Duke Energy and the City of Morro Bay are negotiating an Agreement to Lease (ATL) which, once signed by both parties would be a legally enforceable agreement. The Agreement to Lease contains provisions that address numerous Project components such as: Project terms and definitions, time frames for Project construction and demolition, public and conservation easements, the Project's Outfall Agreement, waterfront improvements, Project fees and payments due to the City, and terms for modifications and arbitration. (Ex. 95.)

1. The Site

The Project site is situated west of State Highway 1, east of the Embarcadero, and south of Atascadero Road. The existing facility also includes a seawater (cooling water) intake structure located near the northern end of Morro Bay Harbor and a cooling water discharge outfall located north of Morro Rock. The site is surrounded by light industrial, coastal-dependent industrial, commercial, marine, residential, visitor-servicing, and recreational land uses.[156] The MBPP property is made up of one parcel totaling 107.35 acres owned by Duke Energy, and a second parcel of 26.27 acres owned by PG&E, which contains a substation/switchyard facility. (Ex. 143, p. 3-10.)

[156] The Staff FSA contains a series of color-coded maps designating the various zoning and land uses for areas within one-mile of the Project site. (Ex. 143, LAND USE Figures 1, 2, and 3.)

The acreage of the existing power generation facility footprint is 9.61 acres and includes the power plant buildings, transformers, stacks, shop, warehouse and office buildings, and parking. However, this figure does not account for the existing tank farm occupying approximately 24 acres. Thus, the total area for the existing MBPP is 33.61 acres. (Ex. 4, p. 1-29.) The proposed facility would occupy approximately 14 acres immediately northwest of the existing facility, on the site of the existing plant. (Ex. 143, p. 3-10.)

The City of Morro Bay Local Coastal Plan/General Plan Land Use Map, designates the MBPP property as General Industrial and Coastal Development-Industrial with an overlay Planned Development and Interim Open Space. The property also has an Environmentally Sensitive Habitat designation. General Plan land uses surrounding the site include Open Space/Recreation with an overlay Park, Low/Medium Density Residential, Environmentally Sensitive Habitat, Visitor Serving/District Commercial, Neighborhood Commercial and General Industrial with an overlay Planned Development and Interim Open Space. The proposed Project site is zoned M-2, Coastal-Dependent Industrial district, with overlay zoning Planned Development and Interim Use. Adjacent zoning districts include M-1 (Light Industrial); R-2 (Duplex Residential); OA-1 and OA-2 (Open Area); ESH (Environmentally Sensitive Habitat); and, C-VS (Visitor Servicing Commercial). (*Id.* p. 3-10.)

Residential development exists to the northeast, east and southeast of the Project site. The majority of these residential developments are low/medium and medium density. The nearest residential area is located approximately 900 feet southeast of the project property boundary, along Scott Street. This development occurred following construction of the existing MBPP. A mobile home park is located immediately north of Duke's 107 acre property. (*Id.* p. 3-11.)

Industrial uses within the Project's immediate vicinity include the existing power plant, the PG&E substation, and the fisherman gear and storage area located

north of the subject property. Marine land uses within the area include commercial fishing and a variety of services and facilities associated with the Morro Bay Harbor. (*Id*.)

Sensitive lands and open space areas within the Project vicinity include Morro Rock, Fairbanks Point, Black Hill Natural Area, Morro Creek, Chorro Creek, Los Osos Creek, and the Morro Bay Estuary. Morro Rock is located approximately one-half mile from the Project property; the lower reaches of Morro Creek run along the northern end of the Project property. (*Id*.) There are twelve (12) offsite sensitive receptors within a one mile radius of the project property.[157] (*Id*.)

In addition to the MBPP property, the Project will use two sites outside of the City of Morro Bay. These include a construction staging area within the Camp San Luis Obispo and an offsite satellite parking area located approximately two to three miles southeast of the City of Morro Bay. Both of these sites are proposed for use during construction and are not proposed as permanent Project components. (*Id*., p. 3-12.)

2. Potential Impacts

Both Staff and Duke land use witnesses testified that the Project will not cause any significant, adverse environmental impacts either directly or cumulatively. Staff witnesses testified that applying the standards found in CEQA, the Project would not cause any unmitigated significant adverse environmental impacts either directly or cumulatively. (Ex. 143, p. 3-49.) The Duke witnesses concurred with the Staff impacts assessment. (Ex. 185 pp. 6-7, 12; 3/12/02 RT 253.) No party offered any conflicting testimony regarding significant impacts. Duke's witnesses also concluded that the Project will include provisions that would greatly enhance the local environment. These include: improved coastal access through the addition of approximately 8,355 feet of new bike paths, acquisition of

[157] Sensitive receptors include human beings located at schools, houses, day care centers, etc.

the Den Dulk property which lies adjacent to the state beach, and a new bridge over Morro Creek, as well as the improved views resulting from the demolition of the existing power plant. Thus, they concluded, the overall impact of the Project on coastal access and local land uses is positive compared to the existing environment, even allowing for any temporary and minor impacts that may occur during construction. (Ex. 185, p. 12.)

In addition to Staff and Duke witnesses, the only other testimony on land use issues came from the City of Morro Bay. As discussed below, the City's witness testified that the MBPP is consistent with the City's land use ordinances, policies and plans taking into account the draft Agreement to Lease between Duke and the City. The purpose of the City's testimony was to recommend an additional condition of certification incorporating by reference specified provisions of the Agreement to Lease between Duke and the City.

3. Consistency with Laws, Ordinances, Regulations and Standards (LORS)

All of the witnesses testifying on land use issues agreed that the Project will comply with all applicable land use laws, ordinances, regulations and standards. However, the City argues that an additional condition is required in order to support this conclusion. The City's proposed condition would specify the inclusion of several items from the Agreement to Lease in order to establish a "greater than normal benefit" which the City claims is necessary for the Project to comply with LORS. The finding of greater than normal benefits arises because, in the City's view, the Project constitutes "new" construction, rather than the replacement of an existing facility, and therefore requires a Conditional Use Permit (CUP). The City's Zoning Ordinance[158] sets the height of "new" construction in the Project area at a maximum of 30 feet. Since the height of the proposed Project would be approximately 145 feet, the City argues that no CUP could be granted without the finding of greater benefits. The City witness stated

[158] City of Morro Bay Zoning Ordinance, Table 17.24.150.

that the greater benefits cannot be shown without the City's proposed condition including terms from the Agreement to Lease. (Ex. 173, pp.3, 6; 3/13/02 RT 5-7.)

Staff conducted an extensive analysis of the Project's compliance with all applicable land use requirements.[159] Based on its analysis, the Staff witnesses testified that the Project will comply with all applicable land use requirements. (Ex. 143, p. 3-49.) The Duke witnesses also reviewed all applicable land use LORS and reached the same conclusion. (Ex. 185; 3/12/02 RT 252.)

Neither the Staff witnesses nor those for the Applicant agreed with the City that the benefits provided to the City through the Agreement to Lease must be considered in order to find compliance with the 30-foot height restriction in the Coastal Dependent Industrial Zone.[160] The Staff witness testified:

> "The 30-feet limit in the M-2 zone is for new construction only and does not apply to 'replacement or repair of existing structures.' (Zoning Ordinance, Table 17.24.150.) The proposed Project is considered to be a 'replacement' of the existing facility, and therefore, is consistent with the City's building regulations." (Ex. 143 at p. 3-26 and 3-27; 3/12/02 RT 302.)

---

[159] These provisions included the California Coastal Act (Ex. 143 p. 3-17 to 3-25), the Subdivision Map Act (*Id.* p. 3-25), State Tide and Submerged Lands Leasing laws (*Id*.), the City of Morro Bay General Plan (*Id*. p. 3-26 to 3-30), the City of Morro Bay Coastal Land Use Plan (*Id.* p. 3-30 to 3-34), the City of Morro Bay Zoning Ordinance (*Id*. p. 3-35), and applicable San Luis Obispo County Land Use Plans and Ordinances (*Id.* p. 3-39.)

[160] In his testimony, the City's witness suggests that Staff relied upon the conveyance of certain properties to the City in the Agreement to Lease to make findings regarding land use conformance:

> "For example, as a result of the prospective property conveyances, the CEC staff has determined that the MBPPP is consistent with Objective 1, Programs LU-62.2 and 64.4, and General Plan LU-77. *See* FSA, pgs. 3-26, 3-29, 3-30. As discussed in greater detail below, the Den Dulk conveyances are also used to justify a finding of greater than normal public benefits for purposes of zoning compliance. *See* FSA pgs. 3-37, 3-38, and 3-41." (Ex. 173 at p. 2.)

However, as Duke witness Marckwald explained, the referenced portions of the FSA refer to "dedication" of these properties to public use within the meaning of Public Resources Code 25529 and not necessarily conveying title to the property to the City as provided in the Agreement to Lease. (3/12/02 RT 254-256.) Staff witness Hamblin confirmed that Mr. Marckwald's interpretation of the FSA testimony was correct. (3/12/02 RT. 300.)

The Duke witnesses agreed that this Project is a "replacement" and that the 30-foot height restriction does not apply. (Ex. 185, Attachment B, at p. 64; 3/12/02 RT 263.) In their view, the best evidence that the Project is a replacement is that immediately upon the completion of the proposed Project the entire existing power plant will be demolished. The Duke witness added that the new Project will be at the same site, use the same fuels and will be smaller than the existing plant being demolished. (3/12/02 RT 386.) In fact, the City's own analysis concludes that the new Project is not an "expansion" of the existing project within the meaning of the General Plan/LUP.[161] (Ex. 173, attached Ex. 1, p. 3.)

Both Duke and Staff concluded that the height restriction does not apply and there is no need to find "greater than normal public benefits" to justify an exception to it. We agree. Moreover, the weight of the evidence establishes that even if the height restriction did apply, there is ample basis for concluding that the benefits of the Project justify its height without consideration of the itemized benefits in the Agreement to Lease. First, the demolition of the much taller existing power plant, including the three existing 450- foot stacks, meets the purpose of the height restriction, which is to minimize the height of structures along the waterfront. Obviously, the new Project with its 145 foot stacks achieves this objective far better than the existing power plant. The City's witness acknowledged this fact during cross examination. (3/13/02 RT 24-25.) Thus, the policy and essential purpose of the height restriction is better achieved by allowing the height of the new structure than by denying it and leaving the much taller existing structure in place.

In addition, there are many other Project benefits that qualify as "greater than normal" without consideration of the Agreement to Lease. Among these are the

[161] The City's own witness referred to the Project as a "replacement of the existing facility". (*Id.;* 3/13/02 RT 8.*)*

ones set forth in the City's own testimony:

> "Without considering the Agreement to Lease, the public benefits from construction of the MBPPP include:
>
> - Demolition of the existing stacks and turbine boiler building;
> - Replacement of the existing plant with a more efficient facility that is designed to minimize view impacts;
> - Remodeling of the waterfront intake facility's facade;
> - Construction of bike and pedestrian paths around the MBPPP;
> - Construction of a bridge across Morro Creek." (Ex. 173 p. 4.)

In fact, the Project includes other benefits to the community as well.[162] Both Staff and Duke witnesses found that the Project's benefits are "greater than normal" even without consideration of the additional benefits in the Agreement to Lease. (3/12/02 RT. 264, 302-303.) We agree.

In addition, both Staff and Duke witnesses testified that there are other substantial reasons for the Commission to reject the City's proposed incorporation of the entire draft Agreement to Lease as a license condition. This is because many provisions of the draft Agreement to Lease are already reflected in the Project description and relate directly to the Project features and mitigation. (3/12/02 RT 287-292, 328.) As such, they are part of the Project and must be achieved, pursuant to the Commission's General Conditions, even if not additionally specified in a particular Condition. (Ex. 115, p. 5-19.) However, the Agreement to Lease contains other provisions that are strictly financial or property agreements (such as rent payments and other lease compensation) and are appropriately enforced through traditional contract law and not by the Energy Commission. (*Id.; see also* 3/12/02 RT 303.)

Thus, we reject the City's proposed condition of certification because there is no need to make a "greater than normal public benefits" finding because the height

[162] These additional benefits include demolition of the existing tank farm, the reduction in noise, the construction jobs, the $10 million local purchasing program, increased revenues to the City of Morro Bay, increased revenues to the County, and to local schools. (3/12/02 RT 261-262.)

limit does not apply to a replacement facility such as the MBPP. However, the finding could be made without consideration of the draft Agreement to Lease even if the height restriction did apply. Finally, the provisions of the draft Agreement to Lease which are relevant to the Project description or mitigation have already been incorporated into the Staff's analysis and license conditions. Remaining provisions in the Agreement to Lease are private financial provisions not appropriately enforced through the Commission.

While CAPE offered no witness on Land Use topics, it did argue in its briefs that the City must amend its Coastal Land Use Plan (CLUP) in order to allow the Project. In CAPE's view, the Project is an "expansion" of the existing facility within the meaning of the CLUP. (CAPE Opening Brief p. 51). However, land use witnesses sponsored by Duke, Staff and the City all agreed that the Project is not an "expansion" as defined in the CLUP and that no CLUP amendment is necessary. (Ex. 155; Ex. 185 p. 9; Ex. 143 p. 3-33; 3/12/02 RT 286, 302; 3/13/02 RT 28.) CAPE offered no expert witness testifying in support of its position.

CAPE argues the Project is an expansion based solely upon the claim of an increase in the "footprint" of the facility from 9.61 acres to 14 acres. However, the facts in evidence do not support CAPE's position. When the total footprint of the existing industrial facility, including the tank farm, is taken into account, the Project will result in a significantly smaller footprint than the existing facility.[163] Staff agreed that the tank farm should be considered in any such comparison on this issue. (3/12/02 RT 327). Furthermore, the change in the footprint of the Project is not a controlling factor. Other considerations include the facts that the existing facility is being completely demolished and replaced by one with a much smaller overall height and total volume. (Ex. 185 p. 2.) Nor are we persuaded by CAPE's argument that the Project amounts to an expansion under the "plain

[163] The 9.61-acre figure for the existing project does not include the existing tank farm. (Ex.143 at p. 3-10). The tank farm is an additional approximately 24 acres. (Ex. 4 at p. 1-29). Thus, the footprint of the entire existing project is 33.61 acres. Since the new project includes demolition of

meaning" of the word "expansion." (CAPE Opening Brief on Group III Topics, p. 51.)

CAPE also argues that the Project will violate two local land use policies. The two identical policies state:

> The City shall insist that the present operation and any further expansion of the PG&E Plant conform to the standards of the Federal and State pollution control requirements and emission levels be maintained. (Morro Bay General Plan Section LU 40.17 and CLUP Policy 5.22.)

CAPE argues that the policies should be applied specifically and exclusively to PM_{10} and SO_2 rather than to emissions generally. However, all of the expert witnesses testified that the Project will comply with all applicable local land use requirements, including these provisions. (3/12/02 RT 252; Ex. 143 at p. 1-3.) The witness for the City specifically rejected CAPE's interpretation, stating that the policy applied not to specific emissions but to "emissions generally." (3/13/02 RT 20.)

The evidence also establishes that areas remote from the Project site which are proposed for use during construction will conform to all applicable land use LORS. The proposed temporary craft parking area involves an approximate 5-acre portion of the 107-acre MBPP property. The parking area is bordered to the north by Morro Creek and to the west by Willow Camp Creek. It also borders the lands under ESHA designation. CLUP Policy 11.14, is applicable under local land use LORS and the Project owner has proposed a 50-foot buffer area around the craft parking area. (Ex. 143, p. 3-39.)

The proposed temporary satellite parking area and construction staging area are located within the County's Estero Area Plan planning area. The Estero Area Plan provides the definitions for the planning area's land use categories and

---

both the existing power block and the tank farm, the total footprint will be decreasing from 33.61 acres to 14 acres.

combining designations and their respective planning standards. These proposed sites which are remote from the power plant site itself do not involve the use of prime farmland, will have temporary use, and will be restored to their original state following construction of the MBPP. The sites will involve integral uses in the construction of the power generation facility and therefore come under the Energy Commission's certification process. Staff witnesses determined that use of the sites for Project-related activities would be consistent with County land use plans and ordinances. (*Id.* pp. 3-39, 3-40.)

4. Coastal Commission Comments

~~Both the Warren Alquist Act and the Coastal Act expressly provide for comments from the Coastal Commission during the power plant licensing process.[164]~~ During the eviden~~ciary~~tiary hearing on land use the Coastal Commission made comments regarding Project compliance with the Coastal Act and LCP policies. (3/12/02 RT 332-338.) These recommendations were essentially repeated in the Coastal Commission's ~~30413(d) Report to the Energy Commission,~~ written comments dated December 12, 2002. (Ex. 320 p. 49-52.) We have incorporated the Coastal Commission's recommendations into the Conditions of Certification; except that, in ~~. In~~ the case of the ~~Coastal Commission's~~ recommendations for public notification requirements in Condition LAND-4, we have tempered the language to provide what we believe to be reasonable flexibility for construction activities.

5. Compatibility with Existing and Planned Land Uses

~~[164] Public Resources Code sections 25523(b) and 30413(d), respectively.~~

The proposed Project would be located on the existing MBPP site, which has been used since 1955 for the purpose of electrical power generation. Thus, the Project represents continued use of a site committed to Coastal-Dependent Industrial use and is not an introduction of new industry in a non-industrial area of the City. Furthermore, the Project is consistent with the City's land use designations and zoning and would not constitute a change in the current development pattern of the City, as established by the City's adopted CLUP and General Plan. The Project is also compatible with the existing industrial character of an immediate surrounding land use, the existing PG&E substation. (Ex. 143, 3-41.)

The record is clear that during Project construction, increased dust, noise, and traffic may affect land uses within the vicinity of the Project. However, with mitigation and implementation of the Conditions of Certification, these impacts would be reduced to a less than significant level.[165] The greatest construction impacts to coastal access and recreation within the Project area would likely occur during the Project's peak construction period.[166] However, the evidence establishes that because the construction-related impacts will be temporary, and given the final improvements to coastal access and recreation also proposed by the Project, the construction-related impacts are considered less than significant.[167](*Id.)*

Staff analysis determined that since the power generating facility itself would be located entirely within the boundaries of the existing MBPP property, the

[165] The details of construction-related environmental impacts are addressed in the respective sections of this Decision i.e.: Noise, Air Quality, Traffic and Transportation, etc.

[166] Peak construction (greater than 100 workers on site at any given time) would occur over a 14 month period, between construction months 5 and 18.

[167] The proposed Project additionally includes the development or improvement of three pedestrian and bike path segments surrounding the MBPP property, realignment and extension of the Embarcadero, a pedestrian/bicycle bridge over Morro Creek, a façade for the seawater intake structure and the dedication of the "Den Dulk" property including Coleman Park to public use.

proposed Project would not disrupt or physically divide an established community, convert agricultural land to a non-agricultural use, or significantly impact sensitive lands or open space. (*Id.)*

In addition, the areas remote from the Project site, which will be used for parking and lay-down functions during the construction period, are compatible in those uses with existing and planned land uses. The proposed satellite parking facility located between State Highway 1 and Quintana Road is within a rural area that is not typically subject to high traffic volumes or other activities. However, any nuisance impacts would be temporary in nature. (*Id*. p. 3-42.) The proposed construction staging and laydown area at Camp San Luis Obispo would be located within an area that has been previously developed. Surrounding land uses have involved similar types of activities and would be compatible with the proposed use. Consequently, no direct impacts are anticipated to occur. (*Id*., Ex. 185, pp. 7-8.)

6. Cumulative Impacts

In addition to the MBPP, Applicant testified that there are 16 proposed projects within a five-mile radius of the MBPP property. In comparison to the MBPP, these projects are relatively small in scale and include residential, commercial and recreational development. In addition, Applicant is proposing demolition of its offsite fuel tanks. Staff determined that the combined projects would not significantly disrupt or physically divide the established community. (*Id*.)

FINDINGS AND CONCLUSIONS

Based on the evidence of record, we find as follows:

1. The proposed project would be located within the existing boundaries of the 107.35-acre Morro Bay Power Plant (MBPP) industrial complex.

2. The MBPP industrial complex site includes: generating units, exhaust stacks, fuel storage tanks, seawater intake and outfall structures, office buildings, and related equipment. The site is directly adjacent to the existing 26.27-acre Pacific Gas and Electric (PG&E) Morro Bay Switchyard, containing transmission lines, towers, switches, bus bars, and transformers.

3. The existing MBPP site is located near Morro Bay Harbor in an area which is surrounded by light industrial, coastal-dependent industrial, commercial, marine, residential, visitor-servicing, and recreational land uses.

4. The nearest residence to the existing MBPP site is located approximately 900 feet from the Project site. A mobile home park is located immediately north of the Applicant's 107-acre complex site.

5. For purposes of the 30-foot height restriction in the Coastal Dependent Industrial Zone, the Morro Bay Power Plant Project constitutes a replacement of the existing power plant facility and is consistent with City of Morro Bay building regulations concerning height restrictions.

6. The Project will provide greater than normal benefits to the City of Morro Bay.

7. The Morro Bay Power Plant Project is consistent with the current General Plan and zoning ordinances for the City of Morro Bay and for the County of San Luis Obispo.

8. The proposed Project is consistent with the goals and policies of the City of Morro Bay and of San Luis Obispo County General Plan and Local Coastal Program.

9. The MBPP will not disrupt or divide the physical arrangement of an established community.

10. The Project will not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

11. The Project is compatible with existing and planned land uses and would not preclude or unduly restrict existing or planned land uses.

12. The Project is consistent with maintaining the environmental quality and character of the Morro Bay community.

13. Applicant's plan for developing public access to coastal resources is consistent with the goals and objectives of the California Coastal Commission and the Warren Alquist Act.

~~15.~~14. The California Coastal Commission asserted that the Project does not comply with elements of the Coastal Act or with the City of Morro Bay's LCP. While we give great weight to the views of any agency as to the laws that it implements, nevertheless we have determined, b~~B~~ased on our independent analysis of all the evidence of record, ~~we have determined~~ that the Project, as conditioned, will conform to all applicable land use laws, ordinances, regulations, and standards, including applicable provisions of the Coastal Act and the City of Morro Bay's Local Coastal Program (LCP).

~~16.The California Coastal Commission has independently determined, and reported to the Energy Commission, that the Project as conditioned does not comply with elements of the Coastal Act and does not comply with the City of Morro Bay's LCP.~~

~~17.~~15. If, in the alternative, ~~the Coastal Commission's determinations of noncompliance, rather than the weight of evidence, were controlling, we had found noncompliance with any provisions of the the Energy Commission would specifically override those provisions of the~~ Coastal Act ~~and~~ or the City's LCP which would prohibit construction and operation of the Project, we would make, and have made, ~~. Accordingly we have made t~~the override findings required by Public Resources Code section 25525. See chapter IX.

We therefore conclude that construction and operation of the Project will not result in significant adverse direct, indirect, or cumulative land use impacts.

Implementation of the Conditions of Certification will ensure that the Project will meet all applicable laws, ordinances, regulations, and standards governing land use.

The Morro Bay Power Plant Project complies with local land use designations and if constructed and operated under the Conditions of Certification which follow, the Project will not impose significant adverse impacts upon local land uses.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall comply with the State requirements (Pub. Resources Code section 6701-6706) for the leasing of tide and submerged lands involving the Public Trust for Commerce, Navigation and Fisheries administered by the City of Morro Bay for the project's Outfall Area.

Verification: The project owner shall submit to the California Energy Commission's Compliance Project Manager (CPM) a copy of the final executed Outfall Lease Agreement, that covers the City's administered property. Said Lease Agreement shall be submitted prior to November 15, 2004 or prior to the start of "commercial operation," whichever occurs first.

LAND-2 Prior to the start of commercial operation, the project owner shall provide land in San Luis Obispo County, within or proximate to the City of Morro Bay. This land shall be located in the coastal zone, as defined in Section 30150 of the Coastal Act, to be established for "public use" in accordance to Section 25529 of the Warren-Alquist Act subject to the review and approval by the CPM. Said land shall be covered under an easement designating it for "public use", while balancing such use with the protection of environmentally sensitive habitat areas. Said land shall be maintained by the project owner and shall be available for public access and use, subject to restrictions required for security and public safety. The project owner may dedicate such public use land to any local agency agreeing to operate or maintain it for the benefit of the public. If no local agency agrees to operate or maintain said land for the benefit of the public, the project owner may dedicate the land to the State.

Protocol: The project owner shall provide a location map, a current plot plan, survey map showing dimensions, the legal description(s) and a written description of the land being proposed for public use to be granted and a copy of the "public use" easement language for review and approval by the CPM.

If the land to be established for "public use" is located within the State designated "Coastal Zone" in accordance to the California Coastal Act, said land shall be subject to review and comment by the Executive Director of the California Coastal Commission.

The land to be established for “public use” shall be located within, or proximate to, the jurisdictional boundary of the City of Morro Bay and said land shall be subject to review and comment by the City of Morro Bay.

The CPM shall provide the Executive Director of the Coastal Commission and/or the affected local government 30 calendar days to provide written comments to the CPM.

Verification: The project owner shall provide to the CPM a copy of the recorded grant deed and executed “public use” easement on the land for public use approved by the CPM prior to the start of commercial operations by the new power generation facility. If the project owner chooses to maintain the ownership of the land, the project owner shall provide monthly monitoring of the maintenance and operation of the land in the annual compliance report.

LAND-3 Prior to the start of site mobilization, the project owner shall identify the final lay down/staging area(s) for the project for approval by the CPM. The project owner shall provide to the CPM for review the following items: (1) descriptions of the final lay down/staging areas identified for construction of the project, including (a) Assessor's Parcel numbers; (b) addresses; (c) General Plan, and LCP (if applicable) land use designations; (d) zoning; (e) site plan showing dimensions; (f) owner's name and address (if leased); and, (g) duration of lease (if leased); and, if a discretionary permit was required; (2) copies of all discretionary and/or administrative permits necessary for site use as a lay down/staging areas.

If a lay down/staging area is to be located within the jurisdictional boundary of the County of San Luis Obispo, the City of Morro Bay and/or the State designated Coastal Zone, the County of San Luis Obispo, the City of Morro Bay and/or the Executive Director of the California Coastal Commission shall have 30 calendar days to provide written comments on the lay down/staging area to the CPM.

Verification: Sixty (60) days prior to the start of site mobilization, the project owner shall provide to the CPM for review and approval the final lay down and staging area(s) information as specified above.

LAND-4 The project owner shall comply with the State requirements (Pub. Resources Code section 30210-30214) to insure that public access to beach and waterfront areas and beach/waterfront parking areas serving Morro Strand State Beach, Morro Rock Natural Preserve and Morro Bay State Park within a one mile radius of the existing 107 acre MBPP property are not closed or substantially access-impaired. Access shall not be closed for longer than 24 hours at any given time due to construction activities related to the new power generation facility or the demolition of the old power generation facility, except in the case of an unforeseen emergency event that requires limiting access to protect public health and safety, as determined by the CPM. In the case of public access

limitations substantially exceeding 24 hours at a time, the project owner shall post notices informing the public of the anticipated length of the closure and of alternative nearby public accessways.

Protocol: The project owner shall prepare a complaint resolution form, or functionally equivalent procedure and/or post an 800 telephone number acceptable to the CPM, to document and respond to public access complaints. The project owner shall attempt to contact the person(s) making the complaint within 24 hours. The project owner shall submit a report documenting the complaint and actions taken. The report shall include a complaint summary, including final results.

Verification: In Monthly Compliance Reports during construction of the new facility and/or demolition of the old facility, the project owner shall submit to the CPM copies of any filed complaints. The project owner shall retain copies of the complaints in a file available to the public until the issuance of the final inspection for the demolition of the old power generation facility by the CBO.

LAND-5 The project owner shall ensure that all applicable design, development, operational, combining designation, and special use standards of the San Luis Obispo County Coastal Zone Land Use Ordinance (Title 23 of the San Luis Obispo County Code) are fully adhered to during the pre-construction, construction, use, and restoration of the proposed satellite parking area and construction laydown/staging area.

Protocol: Prior to site mobilization for the satellite parking area and laydown/staging areas, the project owner shall submit any required design, construction, operational, and restoration plans for the satellite parking area and laydown/staging area to the applicable departments of San Luis Obispo County and the Executive Director of the California Coastal Commission if applicable, for review and comment.

The San Luis Obispo County Department of Planning and Building, and, if applicable the Executive Director of the California Coastal Commission shall have 30 calendar days to review the satellite parking area and laydown/staging area and provide written comments to the CPM to review for approval. Said 30-calendar day review period shall start upon the submittal of the plan or plans to the San Luis Obispo County Department of Planning and Building and said Executive Director by the project owner.

Verification: At least 30 days prior to site mobilization for the satellite parking and laydown/staging area, the project owner shall submit written evidence to the CPM for approval demonstrating that the project conforms to all applicable adopted regulations and requirements as established by the San Luis Obispo County Coastal Zone Land Use Ordinance.

LAND-6 To help promote public access and recreation adjacent to the project site and satisfy Public Resources Code section 30210-30214 and 25529, the project owner shall fund an endowment, through a one-time payment of $355,000.00 (in two payments as described within the verification), to be used for the purpose of maintaining any proposed Class I (approximately 5,261 feet) and Class II (approximately 3,094 feet) bike paths and pedestrian paths, irrespective of ownership. The endowment and its income will be used to fund basic maintenance activities (signage, slurry seal, stripping, sweeping, patching, landscaping, lighting bulbs replacement, if any, and routine repairs) for these bike and pedestrian paths for the life of the project. These maintenance activities will be carried out by the City of Morro Bay or other appropriate entity, as determined by the project owner in consultation with the Executive Director of the California Coastal Commission and approved by the CPM.

Protocol: A Memorandum of Agreement (MOA) shall be executed between the Energy Commission, the Executive Director of the California Coastal Commission, the project owner, and the entity selected to carry out the basic maintenance activities required by this condition. At a minimum, the MOA shall contain the following: 1) a provision stating that the endowment and income will be used to carry out basic maintenance activities as indicated above; 2) a provision requiring the selected entity to deposit the funds into an individual interest-bearing account and; 3) a provision requiring the entity to maintain Generally-Accepted Accounting Principles and financial management.

As requested by the CPM or the Executive Director of the California Coastal Commission, but not more frequently than once each year during the life of the project, the project owner shall meet with the CPM, the Executive Director of the California Coastal Commission, and the designated maintenance entity to determine if the remaining funds comprising the endowment are sufficient to cover the costs of annual basic maintenance activities planned for such year. If the parties mutually agree that the funds generated are not sufficient to cover such costs, the project owner shall contribute sufficient funds to cover the anticipated shortfall for that year. In the event that the parties cannot mutually agree on the adequacy of the endowment to cover any such year's annual maintenance costs, the CPM shall make the final determination on the issue of adequacy of funds. If the CPM determines that the funds in the endowment are insufficient to cover such maintenance costs, the project owner shall contribute sufficient funds to cover the anticipated shortfall for that year.

Verification: Within 60 days after the completion of the bridge over Morro Creek, or completion of the first segment of Class I bike path proposed in the Project's AFC (October 2000), as amended, whichever is earlier, the project owner shall

remit to the CPM a check in the amount of $177,500 (50% of the fund). The CPM will then transfer this amount to the agreed-upon entity that will carry out the purposes of the MOA. The MOA shall be executed by all parties prior to or on the date the above amount is transferred to the agreed-upon entity. Within 60 days of the completion of the final segment of bike or pedestrian path, the project owner shall deliver to the CPM the balance of the endowment. The CPM will then transfer these funds to the agreed-upon entity.

Note that Conditions Land - 3, 4, and 5 apply to tank farm demolition activities if lay down and/or staging areas will be used for such activities.

IX. OVERRIDE

There was considerable debate about the interpretation and implementation of two sets of provisions of the Warren-Alquist Act that require coordination with the Coastal Act. This section of the Decision discusses and then applies those provisions.

A. SECTIONS 25523(d)(1) AND 25525: COMPLIANCE WITH THE COASTAL ACT AND WITH LCPS.

1. Interpretation of the Statutes

Section 25523(d)(1) requires the Energy Commission to find whether a proposed facility complies with all applicable laws, ordinances, regulations, and standards ("LORS") including, when a facility is proposed in the coastal zone, compliance with the Coastal Act and with local coastal plans. If the Commission finds noncompliance, then section 25525 requires the Energy Commission to "consult and meet with the [Coastal Commission] to attempt to correct or eliminate the noncompliance~~".~~." If, after that, the proposed facility still does not comply, the Energy Commission may certify the facility only if it determines that the proposed facility "is required for public convenience and necessity and that there are not more prudent and feasible means of achieving such public convenience and necessity."

Those determinations are solely within the province of the Energy Commission. The Energy Commission gives great weight to the assessment of the Coastal Commission on the compliance of proposed facilities with the Coastal Act and with local coastal plans (just as the Energy Commission also gives great weight to the assessment of other agencies on the compliance of proposed facilities with

the laws that they administer), but the Energy Commission is ultimately responsible for making the determinations, based on the evidence in its record.[1]

As discussed in the Land Use section of this Decision, based upon our independent analysis of all the evidence of record, we have determined that the Project, as conditioned, will conform to all applicable land use laws, ordinances, regulations, and standards, including applicable provisions of the Coastal Act and the City of Morro Bay's Local Coastal Program (LCP). We acknowledge that the California Coastal Commission has ~~independently determined, and reported to the Energy Commission,~~ asserted that the Project as conditioned does not comply with elements of the Coastal Act and does not comply with the City of Morro Bay's LCP. ~~. We have carefully considered all of the specific provisions reported by the Coastal Commission as necessary for Project compliance. As detailed within the relevant sections of this Decision, we have incorporated all of the Coastal Commission recommendations supported by the evidence of record.~~ We have carefully considered the Coastal Commission's determination that the Project with once-through cooling and a Habitat Enhancement Program does not comply with the Coastal Act or the City of Morro Bay's LCP. We have nevertheless independently determined that, based on the weight of evidence, the Project does comply.

However, to remove all doubt regarding the ability of this Decision to allow the Project to proceed and out of an abundance of caution, we have performed the analysis and made the findings required by Public Resources Code section

[1] Thus the Coastal Commission's role in determining compliance with the Coastal Act (and all other agencies' role with regard to other LORS) under Sections 25523(d)(1) and 25525 is different from – albeit related to – the Coastal Commission's role in making recommendations to achieve the objectives of the Coastal Act under Section 25523(b). Under the latter, as we have discussed at pp. 5 - 8 above, the Coastal Commission independently makes recommendations that are binding on the Energy Commission unless we determine that the recommendations are infeasible or would cause a greater environmental impact.

25525 to specifically override the portions of the Coastal Act and the City of Morro Bay's LCP which could potentially prohibit construction and operation of the Project. That discussion follows below.

2. Section 25525 and the Override

Conceptually, there are two types of "overrides" which may come into play in a power plant siting case. The first arises under CEQA. Where a project will result in significant environmental impacts that cannot be mitigated, an agency cannot approve that project unless it finds that such impacts "are acceptable due to overriding concerns". [14 Cal. Code of Regs., § 15092 (b)(2)(B).] In arriving at these overriding considerations, the decision-making agency must balance, as applicable, "the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project." [14 Cal. Code of Regs., section 15093 (a).] If, in the agency's judgment, the benefits of the proposed project outweigh the adverse environmental effects, such effects may be considered "acceptable," and the agency may approve the project. However we have found that the Project will not have a significant environmental effect under CEQA. Therefore this override provision is not applicable in the case before us.

Second, in the case of power plant licensing, applicable law provides for another type of override. Where the Commission considers the licensing of a project that does not conform to state or local laws, ordinances, regulations, or standards (LORS), the Commission cannot license that project unless it finds (or "determines") "that such facility is required for public convenience and necessity and that there are not more prudent and feasible means of achieving such public convenience and necessity." (Pub. Resources Code § 25525.) This determination must be made based on the totality of the evidence of record and consider environmental impacts, consumer benefits, and electric system

reliability. In essence, similar to CEQA override findings, the lack of conformity of a project with LORS is to be balanced against its benefits as well as the consideration of feasible alternatives. We address these matters in the following discussion.

a. Section 25525 (LORS Override)

Public Resources Code section 25525 provides in pertinent part:

> The commission shall not certify any facility when it finds... that the facility does not conform with any applicable state, local, or regional standards, ordinances, or laws, unless the commission determines that such facility is required for public convenience and necessity and that there are not more prudent and feasible means of achieving such public convenience and necessity. In making the determination, the commission shall consider the entire record of the proceeding, including, but not limited to, the impacts of the facility on the environment, consumer benefits, and electric system reliability.

This statutory provision, especially when read in conjunction with other provisions of the Public Resources Code (see, e.g., §§ 25001, 25005, 25006), conclusively establishes that the Legislature has declared that the siting of thermal power plants in excess of 50 megawatts is a matter of state interest. For present purposes, this means that the Commission has the authority to supersede the regulatory capacities of other governmental jurisdictions (such as the California Coastal Commission) and, in accordance with section 25525, license a power plant even though it may not comply with all state or local LORS.

The statute recognizes that a LORS noncompliance does not necessarily equate with the creation of a significant adverse environmental impact under CEQA. The emphasis is simply on a different concern. In order to address the override/noncompliance issue, section 25525 directs us to determine two things: whether a project is required for “public convenience and necessity" and whether

there are not "more prudent and feasible means of achieving such public convenience and necessity."[2] These are discussed below.

i. Public Convenience and Necessity

While there is no judicial decision interpreting section 25525, numerous decisions address the phrase "public convenience and necessity" as it appears in Public Utilities Code section 1001. This phrase is used in a similar context in both statutes and, absent evidence of legislative intent to the contrary, is presumed to have a similar meaning for present purposes. *(Building Material & Construction Teamsters' Union* v. *Farrell* (1986) 41 Cal.3d 651, 665.) It is well-settled by judicial decisions on Section 1001 that "public convenience and necessity" has a broad and flexible meaning, and that the phrase "cannot be defined so as to fit all cases." (*San Diego & Coronado Ferry Co.* v. *Railroad Commission (1930)* 210 Cal. 504*.)* In this context, "necessity" is not used in the sense of something that is indispensably requisite. Rather, any improvement which is highly important to the public convenience and desirable for the public welfare may be regarded as necessary. It is a relative rather than absolute term whose meaning must be ascertained by reference to the context and the purposes of the statute in which it is found. (See, *San Diego Ferry* at p. 643*.)*

In assessing whether or not the Morro Bay Power Plant Project is required for public convenience and necessity, we must logically first ascertain whether this project is reasonably related to the goals and policies of our enabling legislation. The Warren-Alquist Act expressly recognizes that electric energy is essential to the health, safety, and welfare of the people of California, and to the state's economy. Moreover, the statute declares that it is the responsibility of state

[2] Section 25525 specifies that we examine the entire record, and also specifies that we make our determinations based upon the effects of the facility on the environment, consumer benefits, and electric system reliability. We also note that we are not limited to only these three factors, and believe the criteria set forth in the Commission's Decision on the Geysers Unit 16 project remain relevant. (Docket No. 79-AFC-5 (Sept. 30, 1981), Pub. No. P800-81-007; see, pp. 104-105.)

government to ensure that the state is provided with an adequate and reliable supply of electrical energy. (Pub. Resources Code § 25001.)

The evidence of record conclusively establishes that the Project will make use of the existing Morro Bay Power Plant infrastructure while reducing impacts of the existing plant on the Morro Bay community. The Project will generate electrical energy, and that that energy will be consumed in the local area and elsewhere in the state system.

The statute does not, however, focus on public convenience and necessity solely in a limited geographical context. Rather, the focus is on electricity's essential nature to the welfare of the state as a whole. This logically not only includes a specific area, but also recognizes the interconnected nature of the electrical grid and the interdependence of the people and the economy in one sector of the state upon the people and the economy in the balance of the state. The evidence establishes that the Project's duct-firing capability will provide the electrical system with flexible peaking capacity which is necessary to keep the electrical grid stable. Furthermore, the Commission's Integrated Energy Policy Report recognizes the need for increased supplies of electrical energy throughout the state within the next few years.

We believe the conclusion is inescapable that electrical energy is essential to the functioning of contemporary society. Since the Morro Bay Power Plant Project will provide a portion of the electrical energy supply essential to the well-being of the state's citizens and its economy, we conclude that this project is required for public convenience and necessity within the meaning of section 25525.

ii More Prudent and Feasible Means

There is no clear or meaningful distinction between the words "prudent" and "feasible" as used in section 25525.[3] Under the Warren-Alquist Act, the existence of a "prudent and feasible" means of achieving the public convenience and necessity does not prevent an override; only the existence of a "more prudent and feasible" means prevents the Commission from overriding LORS.[4] In making this determination, we must balance a variety of relevant factors, including the Project's impacts upon the environment, consumer benefits, and electric system reliability as specified in the statute, while giving substantial but not overwhelming weight to avoiding LORS noncompliance. We have essentially performed an analogous exercise in our **Alternatives** discussion.

As explained in each of the preceding portions of this Decision, we have found that the Project will not create any significant direct or cumulative adverse environmental impacts. Furthermore, we have specified numerous mitigation measures and Conditions of Certification to ensure that all of the Project's impacts are reduced to below levels of significance. In some areas, we have imposed additional mitigation to ensure that the Project will comply with applicable standards. In others, we have chosen between differing ways of mitigating identified impacts. In each instance we have based our determinations on what we perceive to be the persuasive weight of the evidence of record.

---

[3] We note that CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (Pub. Resources Code § 21061.1; see also, 14 Cal. Code of Regs., §15361 which adds "legal" to the list of factors.) However, even using the CEQA definition, it appears that any "prudent" alternative would have to be "feasible" -- or, in other words, any alternative that is *not* "capable of being accomplished in a successful manner with in a reasonable period of time" would not be "prudent."

[4] This is different from the CEQA override standard which, as we have explained previously, allows permitting of a project with acceptable environmental consequences even if an alternative would be "better" environmentally. However, if a power facility does not comply with with one or more LORS, and an alternative is "better" – i.e., it achieves the public convenience and necessity

Some of the findings noted elsewhere in this Decision regarding the Project's benefits to the environment are repeated below:

- The Project will be located on the site of the existing tank farm to meet local and Project objectives of reducing the industrial influence on the Morro Bay Embarcadero.

- The Project's reduced stack height and site location will reduce existing visual impacts.

- The Project's fuel efficiency using duct firing compares favorably with alternative means of producing peaking power.

- The Project will reduce cooling water intake velocities by 40 percent, thus reducing impingement impacts on marine resources.

- The Project will replace existing 668 mgd capacity pumps with pumps having a maximum capacity of 475 mgd. The new pumps will have variable speed capability that will reduce peak cooling water usage and likely reduce entrainment impacts compared to the existing plant.

- Applying a conservatively protective analysis the Commission has determined that the Project will reduce the long-term usage of cooling water, compared to the existing plant.

- The Project with its associated Habitat Enhancement Program (HEP) will have fewer impacts to the estuarine environment than would the same generation plant using an alternative dry cooling facility without the accompanying HEP.

- The Project's funding of its Habitat Enhancement Program will significantly advance state and local efforts essential for the preservation of the Morro Bay estuary.

In addition, the record contains persuasive evidence that the Project will result in increased revenue to the City of Morro Bay and local jurisdictions from lease

---

obtained by the proposed facility, and it is more prudent and feasible – then the Commission cannot approve the project.

payments, taxes, employment, and sales of services, manufactured goods, and equipment.

The Project will also serve local electrical loads and will replace 50 year-old generation technology with modern, efficient generation. In addition, the Project's duct firing provides the electrical system with flexible peaking capacity which is necessary to keep the grid stable.

These matters are not seriously disputed. We have examined alternatives and found that no feasible alternative sites or technologies reasonably meet the project objectives. In addition, we have extensively examined alternative cooling options and found that none are feasible at the proposed site or are as protective of the environment as is the proposed Project with its associated Habitat Enhancement Program. These issues are essentially the same as those in the **Alternatives** and **Alternative Cooling Options** discussions and we need not repeat them. What is most pertinent, for present purposes, is whether or not the weight of the evidence shows that there is a more prudent and feasible means, when compared with the Project, of achieving similar public convenience and necessity. We conclude that the totality of the evidence of record establishes that there is not.

As summarized in the **Alternatives** portion of this Decision,

- The evidentiary record contains a review of alternative technologies, fuels, and the "no project" alternative.
- No feasible technology alternatives such as geothermal, solar, hydroelectric, or wind resources are capable of meeting Project objectives.
- The use of alternative generating technologies would not prove efficient, cost-effective or mitigate any significant environmental impacts to levels of insignificance.

- No significant environmental impacts would be avoided under the “no project” alternative.

- The evidentiary record contains an adequate analysis of onsite equipment configurations and offsite alternative locations.

- The evidentiary record contains a reasonable review of six alternative sites for the Project, none of which are superior to the proposed site.

- The combination of costs, delays, impediments and risks associated with closed-cycle cooling at this site, makes this alternative not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Therefore, we have found that this alternative is not feasible for this project at this site.

- The use of either dry cooling alternative reviewed in our record would cause greater harm to the overall environment of the Morro Bay community than would the proposed Project with its associate Habitat Enhancement Program

The net result of the potential use of any of the alternative sites or alternative cooling options thus appears to us to be reasonably likely to create potential problems at least comparable to those encountered by the proposed Project. On balance, the various alternative proposals do not, in our estimation, equate with a more prudent and feasible means of achieving public convenience and necessity.

The record reflects that the Applicant and the Staff have repeatedly discussed methods of satisfying applicable local and state LORS. Additionally, we have imposed various measures to attempt to bring the Project into compliance with applicable LORS. Nevertheless, the fact remains that the Coastal Commission has determined that the Project does not comply with the Coastal Act and with the City of Morro Bay’s LCP. We have attempted to identify all noncompliances based on the record before us; we believe this provided sufficient specificity to guide our deliberations in that we were able to balance the Project’s benefits against the purposes and provisions of the various LORS with which the Coastal Commission asserts the Project does not comply.

Therefore, we specifically override the provisions of the Coastal Act and the Local Coastal Plan for the City of Morro Bay which would prohibit construction and operation of the Morro Bay power Plant Project at the proposed location.

FINDINGS AND CONCLUSIONS

Based upon the totality of the evidence of record, and specifically considering the factors enumerated in Public Resources Code section 25525, we make the following findings and reach the following conclusions:

1. The Morro Bay Power Plant Project is required for public convenience and necessity.

2. We have assessed whether there are more prudent and feasible means of achieving public convenience and necessity by balancing a variety of factors, including the Project's environmental impacts, consumer benefits, and electric system reliability.

3. The Project will not create significant direct or cumulative adverse environmental impacts

4. There are no more prudent and feasible means of achieving the public convenience and necessity that will be achieved by the Project.

5. Applicant and Staff have met with representatives of the Coastal Commission and local jurisdictions in an attempt to resolve LORS noncompliances.

6. We have imposed various measures through the Conditions of Certification contained in this Decision to avoid noncompliances with applicable LORS, to achieve compliance with applicable LORS to the extent feasible, and to bring the Project into compliance with applicable LORS.

7. We assume, for the sake of this discussion that the Project does not comply with provisions of the Coastal Act and the LCP of the City of Morro Bay.

8. We specifically override the provisions of the Coastal Act and the Local Coastal Plan for the City of Morro Bay which would prohibit construction and operation of the Project at the site discussed herein.

Therefore, we conclude that that the Morro Bay Project is required for public convenience and necessity and that there are not more prudent and feasible means of achieving such public convenience and necessity, considering the entire record of the proceeding, including, but not limited to, the impacts of the Project. As a result, we override the provisions of the Coastal Act, and the LCP for the City of Morro Bay, with which the Coastal Commission has asserted that there is noncompliance, as provided in Public Resources Code section 25525.